A STUDY TO EVALUATE THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING POST OPERATIVE EXERCISE AMONG PATIENTS UNDERGOING CARDIO THORACIC SURGERY IN KOVAI MEDICAL CENTRE HOSPITAL AT ERODE.

By

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Dissertation Submitted to

THE TAMILNADU DR M.G.R. MEDICAL UNIVERSITY

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In partial fulfillment
of the requirements for the degree of

Master of Science
in
Medical Surgical Nursing
(Sub Speciality – Critical Care Nursing)

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Dharmarathnakara Dr.Mahalingam Institute of

Paramedical Sciences and Research,

Sakthi Nagar, Bhavani, Erode.

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SEPTEMBER 2015

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURE

LIST OF ABBREVIATIONS USED

DMIPSR	Dharamarathnakara Dr. Mahalingam Institute of Paramedical Science and Research
Et.el.,	Any others
Fig.	Figure
H1	Research hypothesis
H2	Research hypothesis
HOD	Head of the Department
KMCH	Kovai Medical Center Hospital
N	Total Number of sample
No.	Number
Prof	Professor
SD	Standard deviation
VATP	Video assisted teaching program
X2	Chi-square-test
%	Percentage
WHO	World Health Organization
+/-	More than, less than

ABSTRACT

“A STUDY TO EVALUATE THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING POST OPERATIVE EXERCISE AMONG PATIENTS UNDERGOING CARDIO THORACIC SURGERY IN KOVAI MEDICAL CENTRE HOSPITAL AT ERODE.”

OBJECTIVES OF THE STUDY;

Objectives

- To assess the level of knowledge regarding post- operative exercise among patients undergoing Cardio thoracic surgery.
- To evaluate the effectiveness of video assisted teaching program on post operative exercise among patients undergoing cardio thoracic surgery.
- To findout the association between pretest level of knowledge on post operative exercise among patient undergoing cardiac surgery with their selected demographic variables.

Hypothesis:

H_1: There will be significant difference between pre test level of knowledge and post test level of knowledge regarding post-operative exercise among patients undergoing cardio thoracic surgery.

H_2: There will be significant association between the knowledge regarding the post operative exercise among cardiothoracic surgery patients with their selected demographic variables.

The major findings of the study related to demographic variables.

- The findings of the study showed that, among the maximum number of the adults, 22% were in age group of 56-65 years, and 8% were in age group of 25-35% years who have also affected in volvular disease.
- The proportion of 77% are male and 33% are female.
- The proportion of 72% are Hindus, 27% are Christians and whereas 1% are Islams.
- The overall proportion of marital status shows, 78% are married 12% are unmarried 0.1% are separated and 9% are widows.
- The overall proportion of educational status shows, 32% were in graduates, 28% underwent secondary school, 27% underwent primary school and 8% were in illiterates.
- The overall proportion of occupational status shows, 33% were private employees, 25% were doing business, 22% were government employees and 20% were others.
- The overall proportion of income status shows, 57% earning above Rs. 9,000/-, 25% earning Rs. 6001/- to 9000/-, 10% earn Rs. 3001-6000/- and 8% were earning below Rs.3000/-

- The overall proportion of residence shows, 58% are Urban area and 42% are in Rural area.

- The overall proportion of dietary habit shows 78% were in non-vegetarians and 22% are in vagetarians.

- The overall proporption of personal habits shows, 27% consume alcohol and smoking, 23% consume smoking only and 10% consumes betalnuts only, and 8% consume tobacco chewing, and 7% consumes alcohol only and whereas 25% consume none of the above.

Major Findings related to Effectiveness of Video Assisted Teaching Program.

- The findings of the study showed that 34(57%) respondents had inadequate knowledge in pre-test and whereas none of them had inadequate knowledge on post test.

- The findings of the study showed that 26(43%) respondents had moderate knowledge in pretest and whereas 20(33%) respondents had moderate knowledge in posttest.

- None of the patients had adfequate knowledge in pretest whereas, in the post test 40(67%) respondents had adequate knowledge.

- The overall post test knowledge mean score of 75% on post operative exercise after cardio thoracic surgery is comparatively more than their pretest knowledge score which has 55.6%. It is confirmed that there was increase in knowledge after the video assisted teaching programme.

- The paired ‘t’ test analysis of the post test knowledge score is 30.4 was found highly significant the result evidently supports the effectiveness of video assisted teaching program in post operative exercises after cardio thoracic surgery and post operative complications.

Major findings related to relationship between socio demographic variables and pretest knowledge score:

- The present study revealed that, there is association between knowledge to education, residence and dietary habits.

- There is no association between knowledge and of age, sex, religion, marital status, occupational status, income status and personal habits.

CONCLUSION

The following conclusions are drawn from the finding of the study. No cardio thoracic surgery patients have adequate knowledge regarding post operative exercise after cardio thoracic surgery. After administration of video assisted teaching program, the knowledge score was improved. The video assisted teaching program is found to effective in terms of gain in knowledge. So the video assisted teaching program is effective in improving the knowledge of cardio thoracic surgery patients.

CHAPTER – I

INTRODUCTION

“Those who do not find time for exercise will have to find time for illness”

- Earl of derby

“Health is vital principles of bliss, and exercise of health”

- James Thomson

Health is a state of physical, mental, social well being and merely the absence of disease or infirmity (WHO) A Truly healthy person not only feels good physically but also has a realistic outlook on life and gets along well with other people.

The state of one’s health is reflective of an individuals’ ability to meet life’s challenges and maintain ones capacity for optimal functioning. This requires the various aspects of one’s makeup i.e. mental, physical and biochemical, to maintain a level of functioning that has a positive influence and support for one another. When we eat correctly, develop healthy exercise and combines these with maintaining a positive outlook, we ourselves the greatest opportunity to function at our best.

Heart is the vital organ of the human body, without which one cannot live. The circulatory system is the body system that brings blood to the body. The heart and all blood vessels make up the circulatory system. Heart is located in the center of chest, slightly behind the breast bone. It is the hollow muscular pump that receives (venous) oxygen poor blood and pumps out (arterial) oxygen rich blood. Each side of the heart consists of an upper chamber called the atria and the lower

chamber called the ventricle. The heart has its own electrical system (pacemaker) to co- ordinate the contraction and relaxation of the heart muscles.

Table : 1 INCIDENCE OF CORONARY ARTERY DISEASE IN INDIA (Percentage of cardiac cases)

AREAS, YEAR AND	PERCENTAGE
DELHI	11.8
BOMBAY	12.1
CALCUTTA	17.3
AMRISTAR	21.6
CHENNAI	13
AGRA	7
HIMACHAL PRADESH	6

Figure 1: CONE DIAGRAM SHOWS INCIDENCE OF CORONARY ARTERY DISEASE IN INDIA (Percentage of cardiac cases)

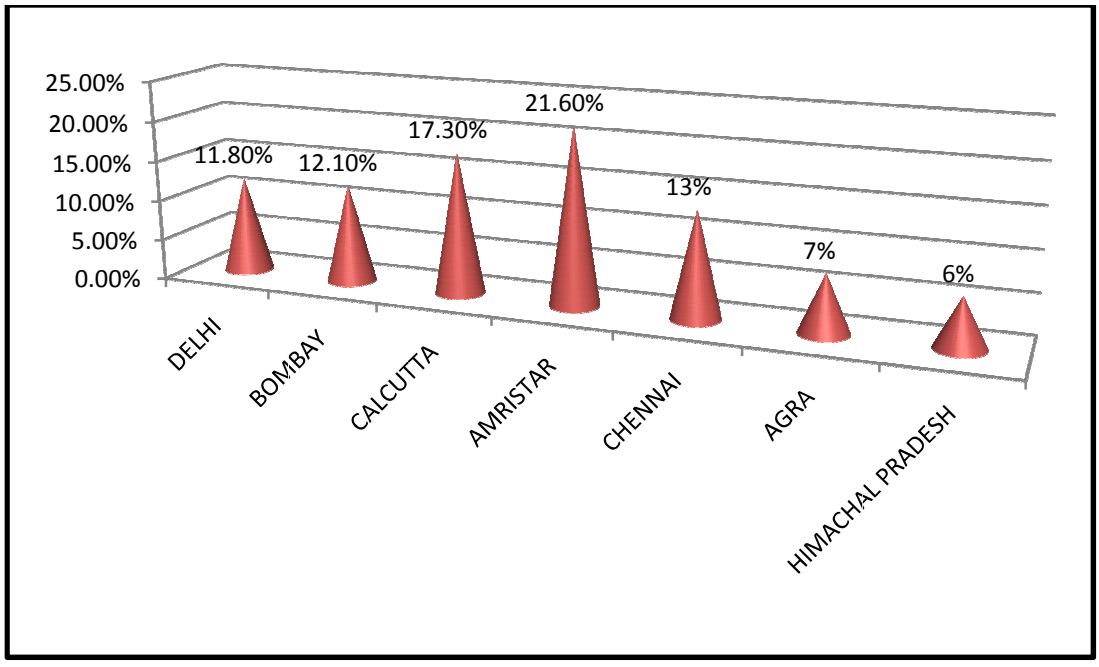


Table 2: INCIDENCE OF CORANARY ARTERY DISEASE IN POPULATION SURVEYS WORLD

COUNTRY	AUTHORS AND REFERENCE NUMBER	OCCUPATION	PERCENTAGE
U .S .A.	Epstein	Garment worker	
		Italian	7.3
		Jews	14.2
		Other ethnic groups	5.1
	Phillips et al	Civil servant	2.3
	Weiner man et al.	Long shore man	3.6
U.K.	Thomas et al	Miners-welsh	38
	Morris et al	Aged 55-64	
		Medical practioners	23.5

Cardiovascular diseases (CVDs) were once thought to be impacting the rich and affluent, but it is now well established that, they afflict the poor as well. While changing lifestyles, unhealthy eating habits and declining activity are the key reasons for high incidence rates in the rich population, the issues of access and affordability account for higher mortality among the urban poor's and rural population. These diseases impact not only the well-being, but can also hold back the economic growth of the country due to increased healthcare expenditure and diminished productivity. India is projected to lose approximately USD 236 billion between 2005-2015 due to CVDs and diabetes.

Current projections suggest that, India will have the largest cardiovascular disease burden in the world. One fifth of the deaths in India are from coronary heart

disease. By the year 2020, it will account for one third of all deaths. Sadly many of these Indians will be dying young. Heart disease in India occurs 10 to 15 years earlier than in the west. There are an estimated 45 million patients of coronary artery disease in India. An increasing number of young Indians are falling prey to coronary artery disease.

India is set to be the heart disease capital of the world in few years; it causes 17.3 million deaths annually. (Dr. Shires' (M.S.) Hiermath)

About 6,00,000 people die of heart disease in the United States every year-that's one in every 4 deaths. Heart disease is the leading cause of death for both men and women. More than half of the deaths due to heart disease in 2009 were in men. Coronary heart disease is the most common type of heart disease, killing more than 85,000 people annually. Every year about 1, 15,000 Americans have a heart attack. Of these, 25,000 are a first heart attack and 90,000 who have already had a heart attack.

By 2020, heart disease will be the leading cause of death through the world. (Shah.et .al.2008). Heart disease is the number one cause of death for both men and women in the United States, claiming approximately 1 million lives annually. It is estimated that someone dies for every 33 seconds in the United States due to cardiovascular disease. (American heart foundation) About 2, 50,000 people in the U.S. are expected to die annually of Sudden Cardiac Death

- 680 every day of the year
- 4, 35,000 American women have heart attacks annually;
- 83 000 are under age of 65 years;

- 35,000 are under age of 55 years.
- 8 million women in the US are currently living with heart disease
- 35,000 are under age of 65 years. Four million suffer from angina.

(Women and heart disease, 2011)

Cardiovascular disease represents a serious medical health problem because of its high mortality and morbidity. On an average, 110 people die of heart disease in Kerala every day. It is estimated that, at least 38,000 people die of heart attack in Kerala every year 1.5 lacks people develops heart disease in Kerala each year cardiovascular disease is the cause of 50% of the total deaths in the state and there by 2020 It is expected to go up to two-third of the total. The ICMR- WHO study on non communicative disease risk factors estimates that 8.72 million of people suffer from hypertension in Kerala, whereas the estimated number of diabetics is 3.48 million. **(Cardio logical society of Kerala.)**

Epidemiology suggests a number of risk factors for heart disease; age, gender, high blood pressure, high serum cholesterol levels, tobacco smoking, excessive alcohol consumption, family history, obesity, lack of physical activity, psychological factors, and diabetes mellitus. While the individual contribution of each risk factor varies between different communities or ethnic groups, the consistency of the overall contribution of these risk factors to epidemiological studies is remarkably strong. Some of these risk factors are immutable; however many important cardiovascular risk factors are modifiable by lifestyle change, drug treatment or social change.

Cardiac surgery is one of the most common surgical procedures, and accounts for more resources expended in cardiovascular medicine than any other single procedure. Cardiac surgery involves sterna incision and cardiopulmonary bypass, patients undergoing cardiac surgery have an increased risk of post- operative pulmonary, which leads to increased post operative morbidity and mortality, increased use of medical resources, longer hospital stay, and increased health care costs.

Cardiac surgery can save lives and improves a quality of life. The outcomes of cardiac surgery can be affected by the quality of pre operative health education provide to the patients. A comprehensive health education programme for cardiac surgery patients sets the stage for preventing post-operative complications and improving patient's outcome. **(Havrilak 2005).**

In 2009, 6.49 percent of patients had some type of infection, including pneumonia, following isolated CABG surgery. The overall infection rate increased 11.1 percent from 5.84 percent in 2008 to 6.49 percent in 2009. As expected isolated CABG patients who develop infections after surgery have a higher mortality rate (5.14 percent vs. 1.05 percent) and a longer hospital stay compared to those who have no infections. (15.73 days vs. 6.28 days).

It is estimated that 90,000 open- heart surgeries are performed every year in our country and majority of these procedures are for coronary artery disease and valular heart disease. The first open heart operations in India were done in Delhi and Chennai in 1969, relatively early by third world standards.

Postoperatively complications involving the heart and pericardium are common after cardiac surgery primarily due to arrhythmias, conduction disturbances, and manifestations of ischemia. Prevention and control of these complications have a major role in the development of cardiac surgery and in the successful outcome of most operations. Arial arrhythmias, primarily atrial fibrillation or less commonly, atrial flutter, occur in 10- 40 percent of patients after open cardiac surgery surgery ranges 0.4 - 1.4 percent, The reported incidence of preoperative myocardial infarction varies widely (2 – 30) percent because of differing definitions and criteria for infarction, but in most series is 3 – 7 percent. The majority of patients develop small, posterior pericardial effusions, after open cardiac surgery, 3-6 percent develops early tamponade that requires re-exploration.

Constructive pericarditis following cardiac surgery was first reported in 1975 and now complications 0.2 – 0.3 percent of all operations without prediction to the type of procedure. Pulmonary complications are common after open heart surgery and are reported in as many as 30 percent of patients. The incidence is higher in order, sicker patients and those with compromised pulmonary function. One or two percent of patients develop pneumothorax after cardiac surgery. Bleeding is the most common intraoperative complication and occurs in up to 10 percent of patients, lower extremity vascular complications occur in approximately 20 percent of patients who require the intra-aortic balloon pump (IABP) and the IABP is responsible for approximately 85 percent of lower leg ischemia, after open heart surgery. Except for death, central nervous system (CNS) injurious is the most devastating complications of open heart operations. The reported incidence of central nervous system complications varies widely (0.7 – 5.0 percent) studies

suggest that, up to 13 percent of patient develop postoperative psychological disturbances that are clinically manifested by atypical behavior, disorientation, or reduced cognitive functions. **(Dristan, 2008)**

Post operative exercise is the fundamental intervention for the prevention or comprehensive management of acute or chronic complications. The immediate post operative respiratory exercise to be performed by cardiothoracic patients at hospital setup are diaphragmatic breathing exercise, coughing with splinting, arm stretch, elbow flexion, elbow extension by exercise turning and incentive spirometer exercises. This exercise can be practiced from 4-6 hours or as soon as the patient weaned from the mechanical ventilator. Aerobic exercise at home can be performed after 6 weeks of surgery. **(Kotrotisious E. *et.al.*,)**

Preoperative patients with the equipment (such as an incentive spirometer) that will be used postoperatively are helpful. Teaching in the preoperative period assists the patient to comprehend the necessity of coughing effectively in spite of incisional pain to achieve positive outcomes postoperatively. Early mobilization is effective in improving postoperative pulmonary outcomes. Preoperative teaching might include information related to the potential for mobilization to a chair during the first evening postoperatively.

Need for study:

The **World Health Organization** estimated that, one half of all deaths in developed countries like USA were from heart diseases. In developing nations too, the increase in coronary heart disease is reaching epidemic proportions. Cardiovascular disease are more common in India and China than in all

economically developed countries in the world together. India and china together account for over 50% of earth's population, details for 4.5 – 5 million deaths from heart disease every year. WHO estimates that 60% of the World's cardiac patients will be Indian by 2010. Nearly 50% of cardiovascular disease related deaths in India occur below the age of 70, compared with just 22% in the west.

It was estimated that by 2020 India will have more than 4.77 million deaths a year due to cardiovascular disease (CVD). China, which has the world's largest population at 1.34 billion, will have 4.53 million deaths due to CVD and 1.37 million due to CHD by 2020. While north Indian states – including Jammu and Kashmir, Punjab and utter Pradesh – have a high percentage of people suffering from heart diseases south Indian state of Kerala and TamilNadu have a higher prevalence of CHD ha said quoting from a study. (Global burden of disease – WHO) A report from Texas heart institute says that thousands of heart Surgeries are performed every day in the united states. In fact, in 2009 alone, surgeons performed 4, 16,000 coronary bypass procedures and more Than 2,300 people had heart transplants. **(Hulzebos EHJ)**

Cardiovascular disease is the World's leading killer, according for 16.7 million or 29.2 % of total global death.

An observational study was conducted in 236 patients who underwent-off-pump coronary artery bypass grafting (CABG) Surgery at the A Carunna university hospital (Spain). Among 159 (60.5%) Patients received pre operative Physiotherapy a Physiotherapist provided a daily session involving incentive spirometry deep breathing exercise, coughing and early ambulation. A logistic regression analysis was carried out in order to indentify variables associated with pulmonary

complications. The study concluded that pre-operative respiratory Physiotherapy is related to a lower incidence of atelectasis.

Pre-operative education is an important Component in the client's operative experience. Teaching about post-operative activities is implemented in the pre-operative phase and the nurses main responsibility. Clients and family's needs to know about surgical events, and sensations, how to manage pain and how to perform physical activities necessary to decrease post-operative complications and facilitate recovery. Pre operative teaching always anxiety and encourages clients to participate actively in their own case.

The Investigator found that because of lack of knowledge on post-operative exercise after cardiac surgery. The patient will not got complete recovery and there is increased rate of recurrence. So the researchers developed into interest and felt need of conducting study on effectiveness of video teaching programme or Post-operative exercises after cardiac Surgery among cardiac Surgery patients. The improvement of knowledge of patients will help to extend into life spar and healthy living.

Spencer king of Emory University Compared 194 bypass Surgery Patients with 198 angioplasty patients. The annual mortality for bypass surgery the patients was 2.1 % per year and that the angioplasty patients 2.4% per year.

In a study of mortality rates in different age group in Medicare patients undergoing either bypass surgery or angioplasty Dr. Eric peterscr and his associated at Duke University find the following 20.

Table 3 : The National Medicare Experience

	Mortality after (Angioplasty) cards 225-915 pts		Mortality after bypass Surgery 357,885 pts	
Ages	**30 day**	**1 yr**	**30 day**	**1 yr**
	%	**%**	**%**	**%**
65-69	2	5.2	4.3	8.0
70-74	3.0	7.3	5.7	10.9
75-79	4.6	10.9	7.4	14.2
>80	7.8	17.3	10.6	19.5

Figure 2: CYLINDRICAL DIAGRAM SHOWS MORTALITY AFTER (ANGIOPLASTY) CARDS 225-915 PATIENTS & MORTALITY AFTER BYPASS SURGERY 357,885 PATIENTS

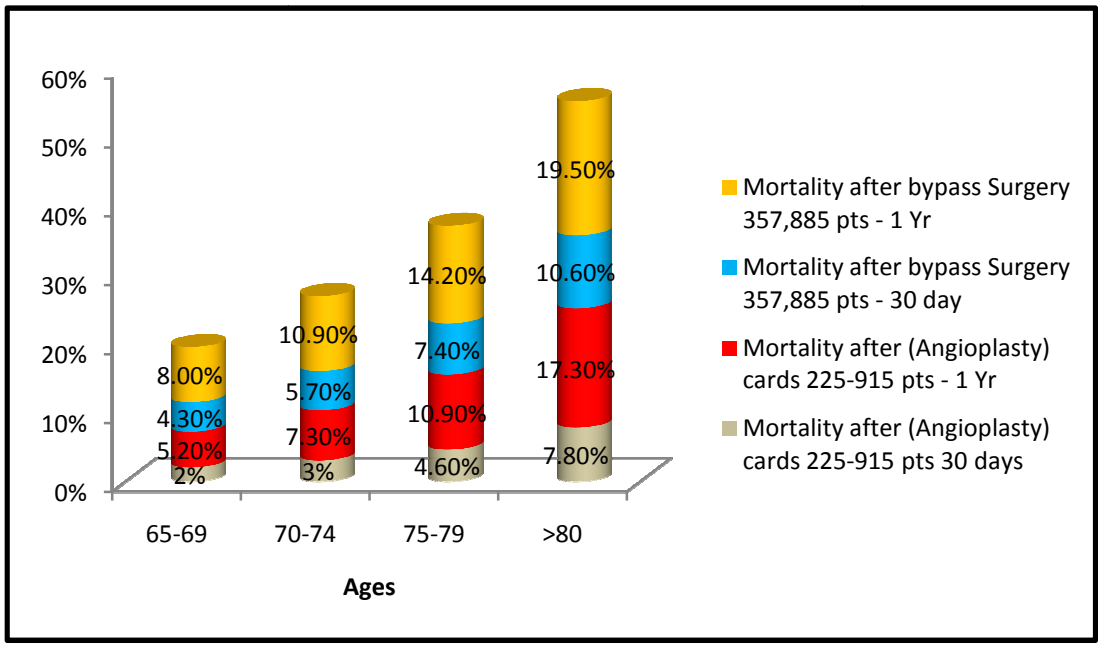


Table 4: Patient who underwent cardiac surgery with cardiopulmonary bypass in a private hospital from Jan 2004 to Dec 2010 to I identify abdominal complications.

Complications	Number	Percentage	Underwent medical Treatment	Under went Surgical Interventation	Death
Total abdominal complications	33	100%			
Include Paralytic ileuses	11	33.3%			
Gastrointestinal `hemorrhage	9	27.3%	26 (78.8%)	7 (21.2)	5 (15.2%)
Gastro duodenal ulcer perforation	2	61%			
acute., Calculus cholecystitis	2	61%			
acute Calculus chololithiasis	3	91%			
Hepatic dysfunction	4	12.1%			
Ischemic bowel disease	2	61%			

STATEMENT OF THE PROBLEM

"A STUDY TO EVALUATE THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING POST OPERATIVE EXERCISE AMONG PATIENTS UNDERGOING CARDIO THORACIC SURGERY IN KOVAI MEDICAL CENTRE HOSPITAL AT ERODE."

OBJECTIVES OF THE STUDY:

Objectives

- To assess the level of knowledge regarding post- operative exercise among patients undergoing Cardio thoracic surgery.
- To evaluate the effectiveness of video assisted teaching program on post operative exercise among patients undergoing cardio thoracic surgery.
- To findout the association between pretest level of knowledge on post operative exercise among patient undergoing cardiac surgery with their selected demographic variables.

Hypothesis:

H_1: There will be significant difference between pre test level of knowledge and post test level of knowledge regarding post-operative exercise among patients undergoing cardio thoracic surgery.

H_2: There will be significant association between the knowledge regarding the post operative exercise among cardiothoracic surgery patients with their selected demographic variables.

Operational Definition:

Knowledge:

It refers to correct response of the people to the knowledge items on the close ended questionnaire regarding post – operative exercise

Assess:

It is a statistical measurement knowledge of people regarding post – operative exercise observed by close ended questionnaire.

Effectiveness:

It is the statistical measurement of difference between pretest and post test knowledge scores

Video – assisted teaching:

A multimedia teaching or which organized and sequential representation of information regarding dengue is explained in detail.

Postoperative exercise:

The exercises performed by the patient who undergone cardiac surgery such as diaphragmatic breathing exercise, coughing with splinting, arm stretch, elbow flexing, elbow extension, leg exercise, turning and incentive spirometry exercise.

Cardiac surgery Patients

The patients who undergoing Cardiac Surgery.

Evaluation:

Evaluation is defined as form of an idea of the amount of number or value of study that will assist in evaluating the impact of recent changes (a system for evaluating how well use form is performing).

Conceptual Framework

Conceptual frame work is a set of concert and propositions that spell out the relationship between them the overall purpose is to move scientific findings meaningful and generalizable

Concepts are the mental images of phenomena and that are the building blocks of the study

Polit and Hunger (1999) states that the conceptual framework is an inter related concept that are assembled together in same scheme by virtue of their relevance to a common thing. This is a device that helps to stimulate the research and the extension by providing both direction and impetus. The present study was aimed to evaluate the effectiveness of video assisted teaching programmed on past operative exercise among patient undergoing cardio - thoracic surgery in selected hospital Erode.

The conceptual framework for study was based on **Ludwig Von Bertatenfy, (1969)** the general open system model. According to general system theory, for survival must receive certain amount of matter, energy and information from the environment. The system regulates the type and amount of input received through the process of selection. The system continuously monitor itself and environment to guides its operations.

The model describes about 3 variables.

Input:

In the present study input refers to the existing knowledge towards post - operative exercise after Cardiac surgery among patient undergoing cardiac surgery, and the socio demographic Characteristics like age, sex, religion, marital status, educational qualification occupation, family income.

Throughput

Through put refers to the different occupational produces to improve the quality of life of the patients. The video – assisted teaching programme or post operative emergency patients undergoing Cardiac surgery places importance of anatomy and physiology of heart, post – operative exercises to be performed, prevention of complication. Assessment of knowledge of post operative exercises after cardiac surgery among Cardiac surgery patients before and after video – assisted teaching programme.

Output:

After processing the input, the system returns to the environment in the form of change in behavior. There is positive result of knowledge score of adequate knowledge gain of cardiac surgery patients on anatomy and physiology of heart, post – operative occurs to be performed after cardiac surgery. Prevention of Complication, congealer, understand the adequate case of patients will enhance the life expectancy the cardiac surgery patient adequate care minimize the psychological problem. In the present study the investigator was not taken any feedbacks from the care giver.

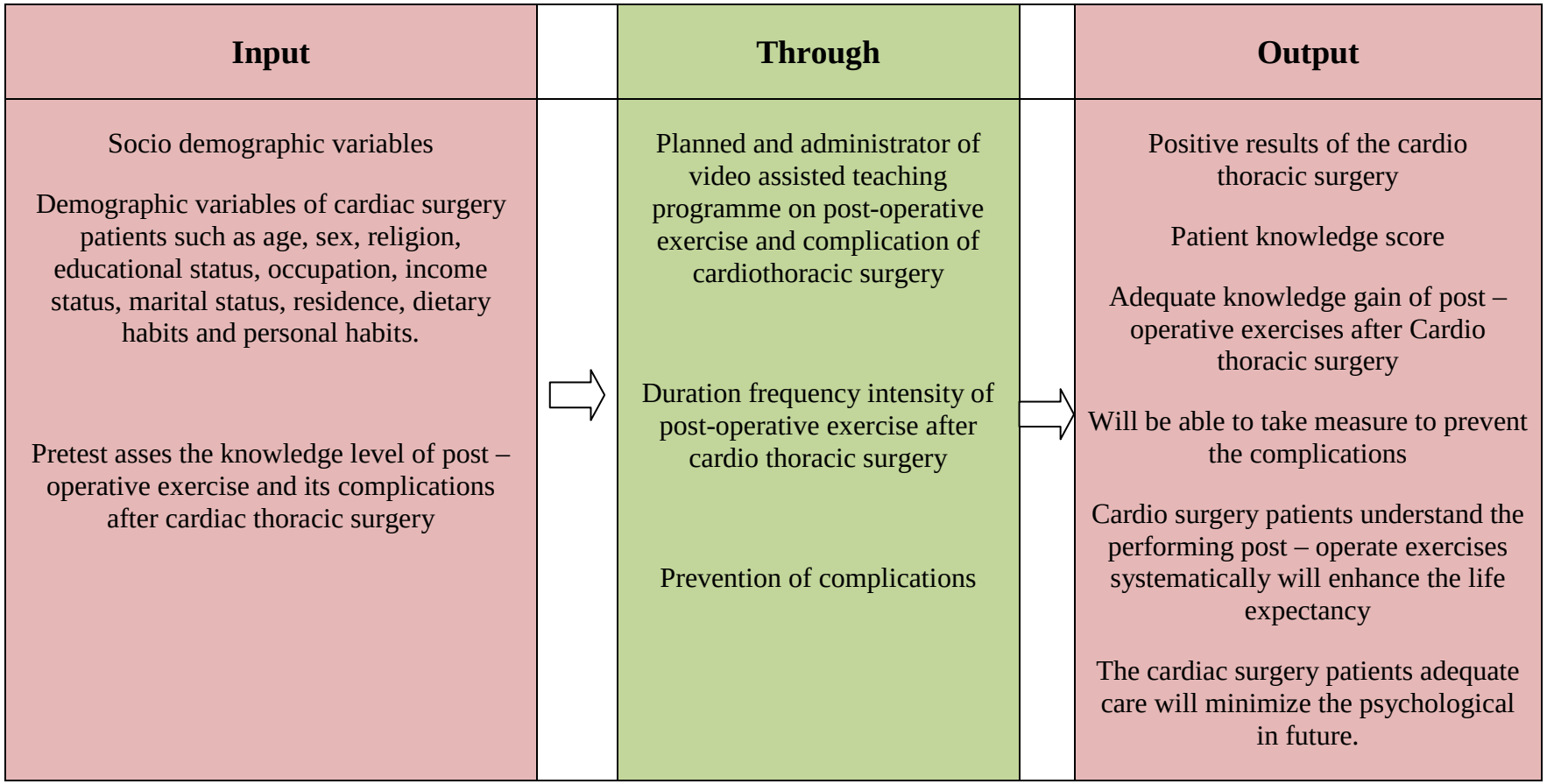


Figure 3 : CONCEPTUAL FRAMEWORK MODIFIED LUDWIG VON BERTAIANFY'S MODEL (1969)

CHAPTER – II

REVIEW OF LITERATURE

Research almost never conducts a study in an intellectual vacuum; their studies are usually undertaken within the context of an existing knowledge base. Researchers often undertake a literature review to familiarize themselves with that knowledge base.

Pollit (1999), literature review refer to the activities involved in identifying and searching for information on a topic and develop an understanding of the state of knowledge on that topic.

Review of literature refers to an extensive, exhaustive and systemic examination of publications relevant to the study. It is an essential part of every research, which helps to support the hypothesis under the study and to critically analyze the structure and content of the research report.

A review of literature is a complication of resources that provides the ground work for further study. It helps with the conceptualization of research problems and the determination of specific problems and the determination of specific methodology to be used for furthered exploration of the problem.

Thus review of literature is an essential step in the development of a research project. It helps the research to propose study in a scientific manner. So as to achieve and desired reject it helps to determine the gaps, consistence and inconsistencies in the available literature about a particular subject about the study.

Literature review can search a number of important functions such as identification of the topic to ascertain what is already known in relation to the problem of interest to develop a broad conceptual context into which a research problem will fit and to suggest ways to conduct a study on a topic of interest.

The review of various studies was organized and presented in the following heading Literature related to post operative exercise after cardiothoracic surgery & complications:

Osborne RH, (2014) conducted a study on randomized controlled pilot study comparing physiotherapy techniques of breathing and mobility, after abdominal surgery at Concord hospital, Sydney, Australia Results from this study may provide evidence, which can be applied to post-operative physiotherapy practice.44 subjects undergoing open abdominal surgeries at high risk of developing post pulmonary complications (PPC) were recruited, subjects were randomly assigned to three groups. Group A only received physiotherapy directed early mobility. Group B in addition to early mobility received deep breathing and coughing. Group C received deep breathing and coughing. The PPC rates were 25%, , 42% and 10% and the day restoration of independent mobility were 5.6. 11.6, 9.11 for 4 group A, B. C. Post pulmonary complications develops in high risk patients after abdominal surgery and physiotherapy techniques of an addition of deep breathing to an early mobility or mobilizing on day three is equally effective in improving recovery.

Look Inland Spool (2013) conducted a study on the effectiveness of methods of pre-operative education in women. The study consisted of 50 adult female scheduled for open cardiac surgery. Te findings suggested that the surgical

patients who receive pre-admission structured education had improved clinical outcomes. They are more satisfied and more likely to meet the targeted discharge date and return to prior functional status earlier.

Nell E, Uys HH, (2012) conducted a quasi- experimental study which was performed on 4 groups –2 experimental groups and 2 control groups to determine the effects of the structured pre-operate educational programmed on the following three factors: satisfaction with self, safe-guarding hope and anticipation of a future. The programmed consisted of three components, via. An educational booklet, an educational evaluating model and the educationist. An analysis of the date indicated a significant difference between the groups that followed the programme and groups that did not follow the programme. This study suggests that the life style functioning of the patients can be improved by means of a pre-operative rehabilitative educational programme by professional nurse. The primary recommendation of the study is that all patients in the process of undergoing CABG surgery should follow a pre-operative educational programme. This programme has a positive influence on the life-style functioning of the patient and will thus promote the presses of rehabilitation.

Hulzebos EHJ. Smit Y. Helders PPJM, Van Meeteren (2011) conducted a study on "effectiveness of physical therapy to prevent post-operative pulmonary complication after cardiac surgery" in turkey. The aim of the study was to identify the effectiveness of which type of physical therapy is most effective. Eight randomized controlled trials with 856 patients were included. The result of this study show the evidence derived from small trials suggests that. Pre-operative physical therapy reduces post-operative pulmonary complications (atelectasis and

pneumonia) and length of hospital stay in patients undergoing elective cardiac surgery. The study concludes that. Pre-operative physical therapy reduces post-operative pneumothorax. Prolonged mechanical ventilation or all-cause of deaths.

Isabel Yanex-Brage Salvador Pita-Fernandez conducted a Observatgional study on effectivenesss of pre-surgery respiratory physiotherapy reduces the incidence of post-surgery pulmonary complications. 263 patients were submitted to off-pump coronary artery bypass grafting (CABG) surgery at A Crunna Universsity Hospital in (SPAIN). Total number of 159(60.5%) patients received preoperative physiotherapy. A physiotherapist provided a daily session involving incentive spirometry. Deep breathin exercises. Coughing and early ambulation. Both groups of patients(those that received physiotherapy and those that did not) were similar in age. Sex. Body mass index creatinine ejection fraction. Number of affected vessels. O2 basal saturation prevalence of diabetes. Dyslipidemia. Exposure to tobacco, age at smoking initiation. Number of cigarettes/day and number of years as a smoker. The most frequent postoperative complications were bypoventilation(90.7%), pleural effusion (47.5%) and atelectasis (24.7%). The common demographic variables taken into account were age, sex. Ejection fraction and whether the patients received physiotherapy or not, the study observed that receiving physiotherapy is variable with an independent effect on predicting atelectasis. The result showed that Preoperative respiratory physiotherapy is related to a lower incidence of atelectasis.

K. Soya 2003 Between 2008 to 2010, 673 patients were referred for isolated coronary artery bypass surgery at a research institution. Patients were identified through a systemic review of the department of cardiothoracic surgery society of

outcome database. A retrospective analysis of prospectively collected demographic clinical data and outcomes were performed. All patients with screening preoperative carotid duplex were reviewed. The study found that the degree of carotid disease as; none of mild stenosis (< 50%), moderate stenosis (50 69 %) severe stenisis (70-99 %) multivariate analysis was performed to identify risk factors. 559 (83%) patients underwent screening preoperative carotid ultrasonography prior to CABG. The incidence of carotid artery disease (> 50% stenosis was 36% with 18% unilateral moderate disease, 10% bilateral moderate and 8% severe disease. The result concluded that, there is a significant incidence of carotid artery stenosis in patient's referred for CABG.

Wouter R, De Vrie (June 2010) conducted a study on the effects of preoperative exercise therapy in patients awaiting invasive surgery on postoperative complication rate and length of hospital stay", a number of 750 patients undergoing joint replacement, cardiac or abdominal surgery were included. The scores ranged from 4 to 8 points. Preoperative exercise therapy consisting of inspiratory muscle training or exercise training prior to cardiac or abdominal surgery led to a shorter hospital stay and reduced postoperative complications rates. The result of the study shows that length of hospital stay and complications rates of patients after joint replacement surgery were not significantly affected by preoperative exercise therapy consisting of strength or mobility training. The conclusions of this study was preoperative exercise therapy can be effective for reducing postoperative complication rates and length of hospital stay after cardiac are abdominal surgery.

Daley A Jolly (2010) conducted a single-blind randomized controlled study conducted on prevention of pulmonary complications after open heart

surgery by preoperative intensive inspiratory muscles training. The aim of the study was to investigate the feasibility and effects of preoperative inspiratory muscle training in reduction of atelectasis for elective open heart surgery. Twenty high risk patients were the participants; patients were divided into two groups, one interventional and one controlled group, the result showed the evidence of atelectasis in 5 patients in control group and 3 patients in the interventional group. The study concluded that preoperative inspiratory muscle training has reduced the incidence of atelectasis after surgery.

Karat Eke. A, (2010) conducted a prospective survey on effectiveness of physiotherapy treatment after cardiac surgery to prevent and treat post-operative complications, improves pulmonary function and promote physical activity, the study was carried out among 33 physiotherapists treating adult cardiac surgery patients. A total population sample was identified and postal questionnaires were sent to the 33 physiotherapists working at the departments of thoracic surgery in Sweden. The results of this survey showed that there are small variations in Physiotherapy-supervised mobilization and exercise following cardiac surgery in Sweden. The conclusion of this survey provides an initial insight into physiotherapy management during post-operative period.

Bray SR, et.al. (2009) conducted a descriptive study conducted on exercise regimens after myocardial revascularization surgery. The study suggested that. The patient after cardio thoracic surgery usually begins respiratory exercises and ambulation earlier. The results concluded that respiratory exercises are emphasized more with surgery patient and the rate of progression of the intensity and duration of training is faster.

Chen SY, et.al. conducted a descriptive study was conducted on respiratory exercises after cardiac surgery. The sample size was 110. The study observed that the patients were comfortable with splinting by means of pillows or folded blanket. When changing positions. Walking and coughing or deep breathing. When getting out of the bed. Role on the side and use arm muscles for assistance.

Dinc. A. Kizilkaya (2009) conducted descriptive study conducted in Australia on deep breathing exercises shows that. It reduces atelectasis and improves pulmonary function after Coronary artery bypass surgery. The sample size was 200, and about 164 patients shown the faster recovery and lesser chance for atelectasis. This study suggested that patients performing deep breath exercises after coronary artery bypass surgery are significantly differing from the patient with no exercises.

Durhan and Gold (2008) conducted a study on late complications of cardiac surgery. Two hundred and fi8fteen consecutive open hert patients were followed preoperatively and post operatively with questionnaires to assess changes in quality of life. 80% patients documented improvement. A pre-operative patient characteristic plays an important role in post-operative improvements. Five hundred and twenty nine patients were followed at six months after elective bypass surgery for physical and mental health improvement. The findings showed that 73.2% had improvement in physical health and 41.6% in mental health.

Cebeci F, Cellk SS (2008), in their study on effectiveness of discharge training and counseling to identify increase self-care ability and reduces post-discharge problems in CABG patients. The researchers explained how discharge training and counseling were provided to patient. Who had undergone CABG surgery, had effects on patient's self care ability and on the problems encountered

after discharge. This study was prospective and quasi experimental. The intervention and control group consisted of 57 patients who were given discharge training and counseling by a researcher with help of information booklet developed for training purposes and 52 patients who were given routines by a nurse. respectively. It was found that, the intervention group had higher mean self-care scores than the control group and experienced fewer problems following discharge compared with patients in control group. The discharge training and counseling services from day of hospitalization had a positive impace on self-care and alleviation of the problems that patients encounter after being discharged.

Lian-Hua, et.al,(2008) conducted a study on incentive spirometry versus routine chest physiotherapy for prevention of pulmonary complications after cardiac surgery. It was done on 876 patients. The clinical trial aimed at preventing pulmonary complications after abdominal surgery. Patients either received conventional chest physiotherapy or were encouraged to perform maximal inspiratory maneuver for 5 minuts during each hour while awake. Using an incentive spirometer. The incident of pulmonary complication did not differ significantly between the groups incentive spirometry 68 of 431 (15.8%) and chest physiotherapy 68 of 445 patients (15.3%). It concluded that, prophylactic incentive spirometry and chest physiotherapy are of equivalent clinical efficacy in the general management of patients undergoing cardiac surgery.

Dristan,(2008) conducted a study on prevention of post-operative pulmonary complications through respiratory rehabilitation at Spain. The aim of the study to investigate the efficacy of respiratory rehabilitation in preventing post-operative pulmonary complication and to define which patients can benefit, Eighty

one participants were taken for the study, in that control.(n=41) and rehabilitation(n=40). The result showed that there was 7.5% of post pulmonary complication in rehabilitation group and 19.5% in control group. They concluded that respiratory rehabilitation protects against post-operative pulmonary complications.

Da Costa D, (2007) conducted a randomized clinical trial of physiotherapy after open heart surgery in high risk patient, the following physio techniques such as deep breathing exercises, secretion clearing techniques and early mobilization were given in patient undergoing open heart surgery. Fifty six participants were taken for the study, control group and experiment group is presented here. Result of study was, over all incident of post-operative pulmonary complication was 16% post pulmonary complication in the non-deep breathing and coughing group resulted 14% and incidence of post-operative, pulmonary complication in deep breathing and coughing group was 17%. They concluded that there is no significance in reduction of post pulmonary complication with intervention of deep breathing, cough exercise and early ambulation, a subjects who undergone open heart surgery with risk lungs.

Fritel, et al., (2006) conducted a Randomized clinical study on prevention of pulmonary complications, after thorco abdominal resection by two different breathing techniques in 2002 at Sweden, the aim of this study was to compare the effect of two different breathing exercises. In that sample size were 70, after the surgery one group(n=36) given breathing exercise by Inspiratory resistance positive expiratory pressure and other group (n=34) were given continuous positive airway pressure. The result shown that non-significant difference between the two study

group. The researcher concluded that continuous positive airway pressure is good than the Inspiratory resistance positive expiratory pressure.

Wagg A. et.al., (2005) conducted a study on chest physiotherapy with positive expiratory pressure breathing after abdominal and thoracic surgery at Linkoping University Hospital, Sweden. Breathing techniques with a positive expiratory pressure(PEP)are used to increase airway pressure and improve pulmonary function. The purpose of this systematic review was to determine the effects of PEP breathing after open upper abdominal or thoracic surgery. Randomized controlled trials(RCT) were selected in evaluating the PEP technique performed with a mechanical device in spontaneously breathing adult patients after abdominal or thoracic surgery. The result showed that only one trial showed the positive effects of PEP compared to other breathing techniques. It also suggested that PEP treatment is better than other physiotherapy breathing techniques in patients undergoing abdominal or thoracic surgery.

Halpin LS, Barnett SD, (2005) conducted a study on preoperative state of mind among patients undergoing CABG: effect on length of stay and post-operative complications. This study was undertaken to determine if a pessimistic self-assessment prior to an elective CABG was predictive of post-operative complications and increased length of stay. Subject (n=565), aged 65 and undergoing elective CABG, were stratified into two groups (optimistic, pessimistic) based on their mental health subscale scores prior to surgery. After adjusting for age, gender, and severity of disease, the average length of stay for pessimistic patients was 1.3 days longer than for optimistic patients. The study result suggested that

negative state of mind prior to a major cardiovascular intervention may be predictive of increased length of stay, permanent stroke and prolonged ventilation time.

Heh.S.S.(2004) conducted a study on 49 patients admitted for undergoing cardiac surgeries. Structured pre-operative teaching was given on deep breathing exercise and coughing exercise. An observational checklist was used to indicate that the patient could perform deep breathing and coughing exercise. Structured pre-operative preparations significantly improved the ability of patient's deep breathing and coughing post operatively as measured by pulmonary function test (PFT). The result s hewed that structured teaching programmed improved their knowledge. Decreases pulmonary complication and reduced the Mean Length of hospital stay.

Asilioglu.k Celia SS, (2004) evaluated the effectiveness of pre-operative education on anxiety of open cardiac surgery patients in Gulhane Millay Medical of Academy, Ankara, Turkey. This study consisted of 100 patients were undergoing open cardiac surgery. Of 100 patients, 50 were placed in the intervention group while the remaining 50 were in the control group. The patients in the intervention group were given a planned teaching according to the patient education booklet. Patients in the control group were informed about pre and post-operative routines by a nurse about the purpose of comparing anxiety levels of the patients in control and intervention groups. The anxiety level of both groups were measured on the third day. After the operation by using the self-evaluation questionnaire for state and trait anxiety inventory. The mean post-operative state and trait anxiety score in the control group were slightly higher than the Mean of patients in the intervention group. In addition, all patients in the intervention group stated that. They were satisfied with the preoperative teaching given by the researcher.

Kotrotsious E. et al (2004) reveals in their study on pre surgical instruction and guidance: study from a Greek surgical clinic: conducted at Greek general hospital that more attention to the patient in the pre-operative period can lead to a faster post-operative recovery. This study suggests that, patients should be informed about surgery and the immediate post-operative period, and should receive information about importance of respiratory exercises and the early ambulation that will be performed.

Gale GD, Sanders DE(2003) conducted a comparative study on Treatment with intermittent positive pressure breathing (IPP) and incentive spirometry(I.S.) among 109 patients after heart surgery with cardiopulmonary bypass. Assessment was done by measurement of vital capacity. Arterial oxygen tension and identification of the radiological signs of atelectasis. All patients were instructed pre-operatively in the treatment which was to be used. Vital capacity. Arterial oxygen tension. While breathing air for the first three postoperative days and the incidence of atelectasis showed no significant difference between groups. The study concluded that spirometer treatment given more frequently may be more effective in preventing atelectasis.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology involves systematic way to solve a research problem. Reason (2007) stated that there is no shortcut to truth. There is no way to gain knowledge of universe except through the gate way of scientific method. Methodology is one, which enables the researches to project a blue print of the research undertakes.

The research methodology presents approach and the research design. The design of the study describe about the setting of the study population, the sample and sampling technique, the data collection technique, content validity and reliability of tools. Pilot study and the method by the data analysis based on the statement.

RESEARCH APPROACH

A research approach tells the researcher as to what data to collect and how to analyze it. It also suggest about the possible conclusion to be drawn from the data. In this study the research sought to assets the knowledge of post operative exercise after cardiothoracic surgery. In the view, the quantitative approach was used for this study.

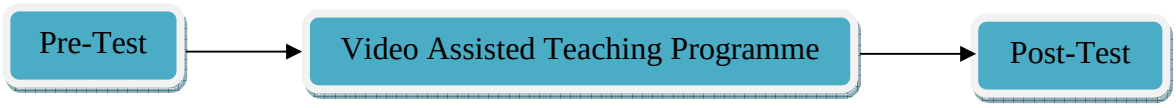
Quasi experimental approach, a sub type of quantitative approach was used for the present study.

RESEARCH DESIGN

"The research design refers to the researchers overall plans for obtaining answers to the research questions and for testing the research hypothesis. The research design spells out the strategies that the researcher adopts to develop information`s that is accurate and interpretable"

(Polit DF, Hungler, 2007)

Research design is the researcher overall plan for obtaining answers to the research questions the investigator has employed for pre experimental, one group pre test –post test design with the help of questionnaire about post operative exercise after cardiothoracic surgery.



VARIABLES

Variables are the qualities, properties or the characteristics of the person, things or situation that change or vary. The variables mainly include in this study are Independent and Dependent variables. Dependent variables explain the effect of independent variables.

INDEPENDENT VARIABLES

Independent variables are the variable that stand alive and is not dependent on any other variable. Video assisted teaching programme about post operative exercise after cardiothoracic surgery.

DEPENDENT VARIABLES

Dependent variables are the variables that the researcher is interested in understanding, explaining or predicting. In this study dependent variable refers to increase in level of knowledge about post operative exercise after cardiothoracic surgery.

POPULATION:

Population refers to the entire aggregation of cases that meets designed criteria. The population of the present study includes all the patients who are admitted in **Kovai Medical Center Hospital, Erode.**

SAMPLE

The sample for the study consists the patients who are undergoing cardio thoracic surgery.

SAMPLE SIZE

The sample size of the present study compromised of 60 patients

SAMPLING TECHNIQUE

Non probability purposive sampling technique was adopted.

SITE:

The site for the study was conduted,

- **Kovai Medical Center at Erode**

SETTING:

Present study was conducted at selected cardio thoracic unit of kovai medical center hospital at erode.

CRITERIA FOR THE SELECTION OF SAMPLE

INCLUSION CRITERIA

- The adults whose age limit is between 20 – 65 years
- Both male and female who are admitted in KMCH
- Adults who are able to understand Tamil and English

EXCLUSION CRITERIA

- Patients who are not willing to participate
- Adults who have visual and hearing disability
- Those who have undergone similar teaching programme

SELECTION AND DEVELOPMENT OF THE DATA COLLECTION INSTRUMENT

The instruments selected in the research should be as far as possible to the best for obtaining data for drawing conclusions, which are pertinent for the study. The tool or instrument is the written device that a research problem and objectives of the study following steps to be undertaken to select and develop the data collection tool.

Selection of the tool

A modified structured tool selected on the basis of the objectives of the study, structured tools was prepared based on the review of literature and in consultation with experts in the field of Medical surgical nursing, physiotherapist and statistician, as it was considered to be the most appropriate instrument to elicit responses from the participants.

Development of the tool

A modified structured tool was prepared to assess effectiveness of video assisted teaching program among post operative exercise after cardiothoracic surgery

DESCRIPTION OF DATA COLLECTION INSTRUMENTS:

The researcher developed a modified structured tool, which consisted of following aspects.

SECTION I – Demographic variables of cardio thoracic surgery patients.

SECTION II - Structured questionnaire about post operative exercise and its complication.

Section I - DEMOGRAFIC VARIABLES

It consists of 10 items related to socio - demographic data which included variables like age, gender, religion, marital status, educational status, occupation, and family income, place of residence, dietary habit, and personal habit.

Section II - STRUTURED QUESTIONNAIRE ABOUT POST OPERATIVE EXERCISE AND ITS COMPLICATION

Structured questionnaire is to assess the level of knowledge about post operative exercise after cardiothoracic surgery. It consists of 30 items divided into 2 areas. They are:

- Knowledge about post operative exercise - 20 items
- Complication of cardio thoracic surgery - 10 items

All the items were multiple choice questions, which have 4 options each. A score value of 1 (one) will be allotted to each correct answer and for wrong answer 0 (zero) was awarded. Thus there were 30 maximum obtainable scores.

KNOWLEDGE

21 – 30 marks	Adequate	(68-100%)
11 – 20 marks	Moderately adequate	(34-67%)
0 – 10 marks	Inadequate	(0-33%)

DEVELOPMENT OF VIDEO TEACHING PROGRAMME

A video assisted teaching programme was developed to educate cardiothoracic surgery patients regarding post-operative exercises after cardiothoracic surgery.

A video assisted teaching programme was developed based on the related literature and the opinion of experts. The main factors that were kept in mind while preparing video teaching programme were simplicity of languages, method of

teaching adopted, literacy level of the samples and areas covered as per knowledge assessment and the relevance of teaching aid.

The video teaching programme consists of post- operative exercises after cardiothoracic surgery that was developed to enhances the knowledge of post-operative exercises after cardiac surgery among patients who undergone cardiac surgery. The video assisted teaching programme was organized in sequence and continuity

VALIDITY OF THE TOOL:

Validity refers to the whether a measuring instrument accurately measures what it is supposed to measure. The content validity of the tool was ascertained in consultation with experts in the field of medical surgical nursing. The experts were requested to give their opinion regarding relevance, appropriateness and degree of agreement in each item in the tool. Suggestions and recommendations given by the experts were accepted and necessary corrections were done for modifying the final tool.

RELIABILITY OF THE TOOL:

The reliability is the degree of consistency or accuracy with which an instrument measures on attribute that is supposed to measures.

In order to establish reliability of the tool. It was administered to 6 cardio thoracic surgery patients, those not in sample are, reliability of the tool was established through test and retest method.

PILOT STUDY

The pilot study is a small preliminary investigation of the same general character as the major study. It is designed to acquaint the researcher with the problems to be corrected in preparation for the large research project and try out the problems for collecting the data. Pilot study was conducted to ensure validity and reliability of the tool and feasibility for giving intervention.

The pilot study was conducted in Heart care Centre Erode from 4-5-15 to 11-5-15 after getting formal permission through Principal. Researcher has selected 6 samples were taken during the pilot study. They were selected by using non probability purposive sampling method.

A structured questionnaire was used in pre test, post test to collect data from the Cardio thoracic surgery patients during pilot study. The topic was explained and the study was conducted. Data analysis was done by using descriptive and inferential statistics and found that the study was feasible.

The reliability coefficient of the whole test was established by using split Half Method and Karl Spear son's reliability formula. Co-efficient of correlation of knowledge test was found to be r = 0.99 so the tool was considered to be highly reliable to conduct the study.

DATA COLLECTION PROCEDURE

The investigator has obtained permission from the medical director of KOVAI MEDICAL CENTER, ERODE, to conduct the final study in KOVAI MEDICAL CENTER HOSPITAL. The data was collected in the month of 15/05/2015 to 30/06/2015. The investigator selected 60 Patients who are

undergoing cardiothoracic surgery by non-probability purposive sampling technique. Each day the researcher selected 3-4 cardiothoracic surgery patients. The purpose of interview and schedule was explained to the samples with self-introduction. The interview was conducted individually. The patients took 30-45 minutes to give answers for the questions and the patients were very co-operative. Pre-test was administered to 60 cardiothoracic surgery patients and the Video assisted teaching programme was given daily for each group and post- test was conducted after 10 days by using the same tool has used for the pre-test.

PLAN FOR DATA ANALYSIS

The collected data was planned and analyzed data in the form of descriptive and inferential statistics. The analyzed data will be presented in the form of tables and figures by using percentage and chi-square test.

NO	DATA ANALYSIS	METHOD	REMARKS
1.	Descriptive	Mean standard deviation percentage	Assess the level of knowledge about post operative exercise after cardiothoracic surgery.
2.	Inferential statistics	Chi – square test	Analysis the association between demographic variables and knowledge about post operative exercise after cardiothoracic surgery.

THE DATA WILL BE ANALYZED AS FOLLOWS:

1. Organize data in master coding sheet.

2. Demographic variables are to be analyzed in terms of frequencies and percentage.

3. Knowledge scores are to be presented in the form of mean, mean percentage and standard deviation.

4. Paired ‘t’ test was used to determine the significant of difference between mean pretest scores and post test scores of the study group and mean gain scores of study group before and after video teaching programme.

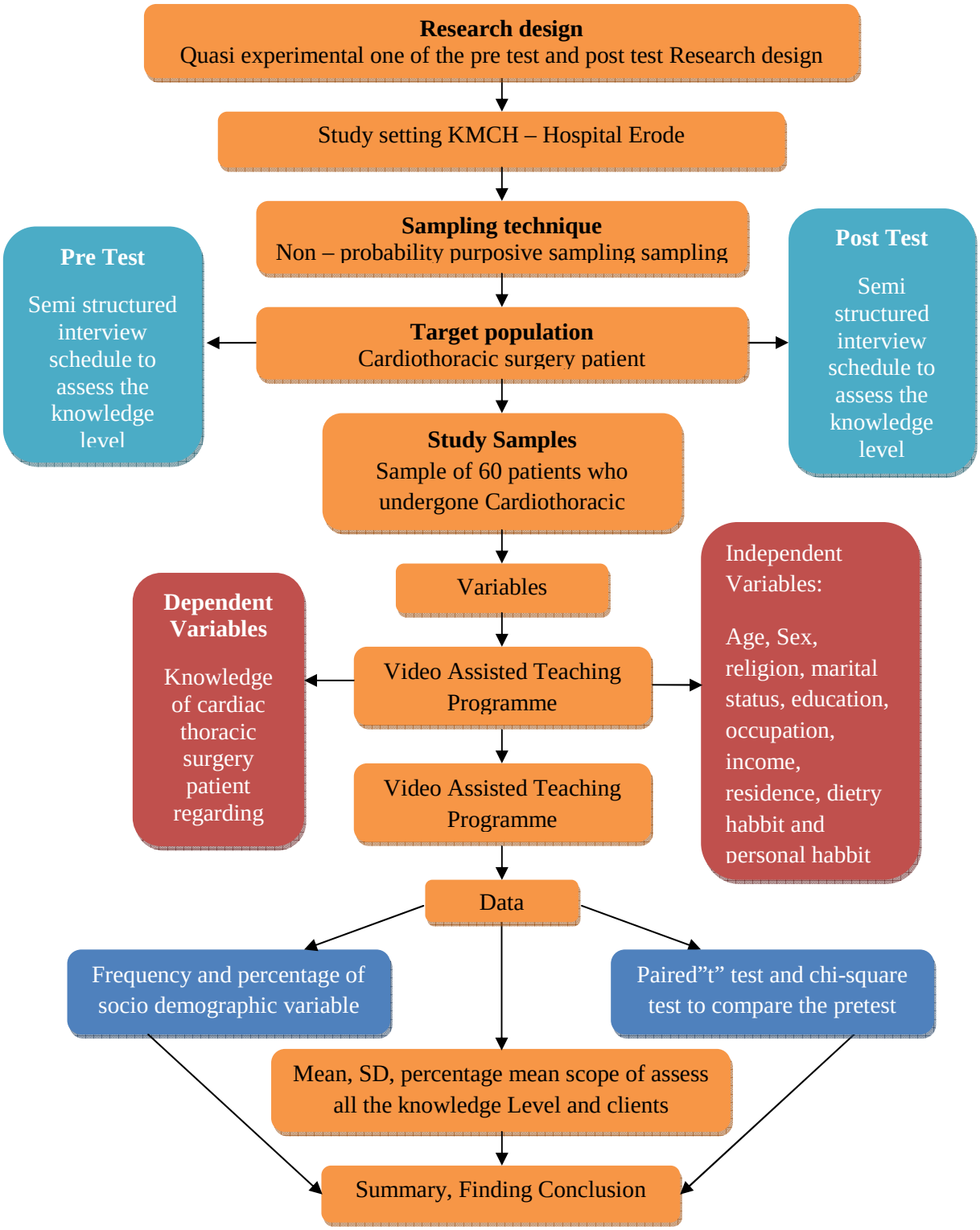
5. Chi-square test was used to determine the association between demographic variables and knowledge about post operative exercise after cardiothoracic surgery.

ETHICAL CLEARANCE

The proposed study was conducted after the approval of dissertation committee of the college, and also after the consent from the study participants without violating the human rights.

Figure 4 : Schematic Representation of

Research design of the study design



CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

"Get the habit of analysis-analysis will in time enables synthesiss to become your habit of mind".

-Frank Lloyd Writht quotes

Analysis is the process of categorizing, organizing, manipulating and summarizing the data to obtain answers to research question. The purpose of analysis is to reduce data to interpretable form. So that the relations of research problems can be studied and tested.

Data analysis means the systematic organization and synthesis of research data and the testing of research hypothesis using those data.

- (Polit & Beck – 2008)

This chapter deal with analysis and interpretation of the data elicited from a sample of 60 adults on knowledge about post operative exercise after Cardio thoracic surgery at KMCH Hospital Erode.

DESCRIPTION OF DATA COLLECTION INSTRUMENTS:

The researcher developed a modified structured tool, which consisted of following aspects.

SECTION I – Demographic variables of cardio thoracic surgery patients.

SECTION II - Structured questionnaire about post operative exercise and its complication.

Section I - DEMOGRAFIC VARIABLES

It consists of 10 items related to socio - demographic data which included variables like age, gender, religion, marital status, educational status, occupation, and family income, place of residence, dietary habit, and personal habit.

Section II - STRUCTURED QUESTIONNAIRE ABOUT POST OPERATIVE EXERCISE AND ITS COMPLICATION

Structured questionnaire to assess the level of knowledge about post operative exercise after cardiothoracic surgery. It consists of 30 items divided into 2 areas. They are:

- Knowledge about post operative exercise – 20 items
- Complication of cardio thoracic surgery – 10 items

All the items were multiple choice questions, which have 4 options each. A score value of 1 (one) will be allotted to each correct answer and for wrong answer 0 (zero) was awarded. Thus there were 30 maximum obtainable scores.

SECTION : I

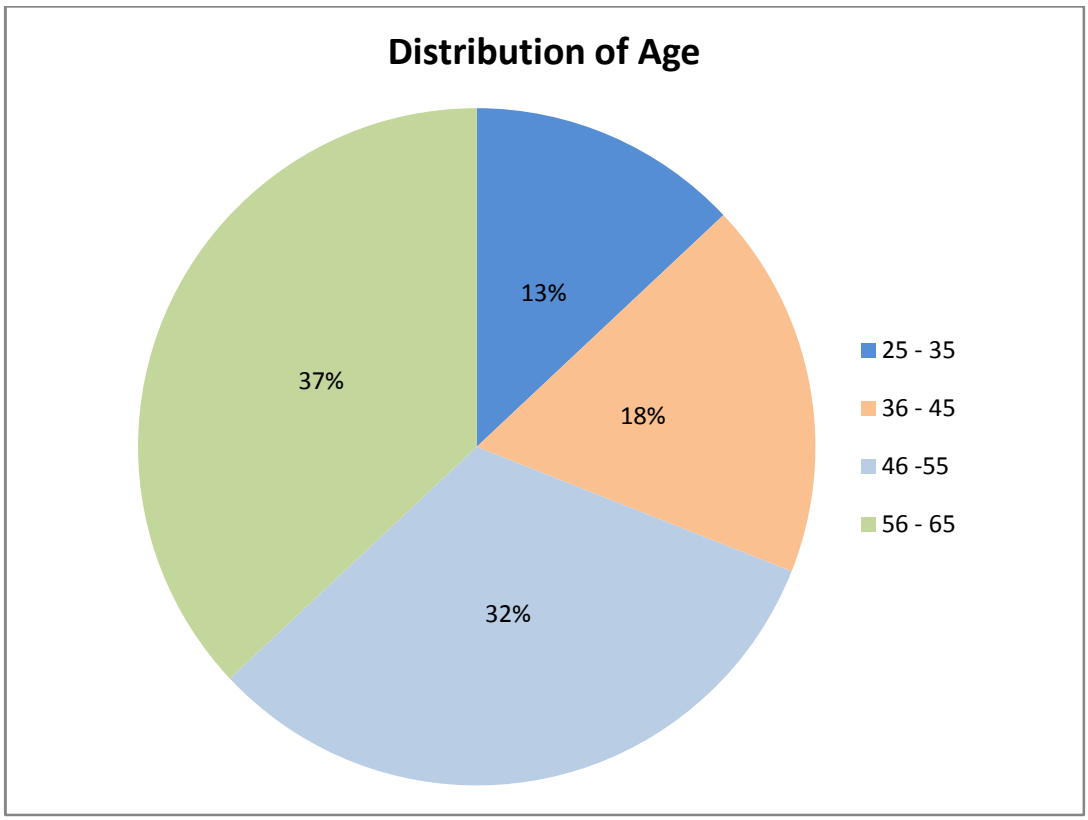
Table 5 : DISTRIBUTION OF PERCENTAGE RELATED TO DEMOGRAPHIC VARIABLES

Demographic variables	Categories	Frequency	Percentage
Age Group	25 – 35	8	13%
	36 – 45	11	18%
	46 – 55	19	32%
	56 – 65	22	37%
Sex	Male	46	77%
	Female	14	23%
Religion	Hindu	43	72%
	Christian	16	27%
	Islam	1	1%
Martial Status	Married	47	78%
	Unmarried	7	12%
	Divorced	1	1%
	Widow/Widower	5	9%
Educational Status	Illiterate	8	13%
	Primary	16	27%
	Secondary	17	28%
	Graduate	19	32%+
Occupational Status	Private Employee	20	33%
	Government Employee	13	22%
	Business	15	25%
	Others	12	20%

Income Group	Below 3000	5	8%
	3001 – 6000	6	10%
	6001 – 9000	15	25%
	Above 9000	34	57%
Residence	Rural	25	42%
	Urban	35	58%
Dietary Habit	Vegetarian	13	22%
	Non Vegetarian	47	78%
Personal Habit	Alcohol/Smoking	16	27%
	Alcohol	4	7%
	Smoking	14	23%
	Tobacco chewing	5	8%
	Betal Nut chewing	6	10%
	None	15	25%

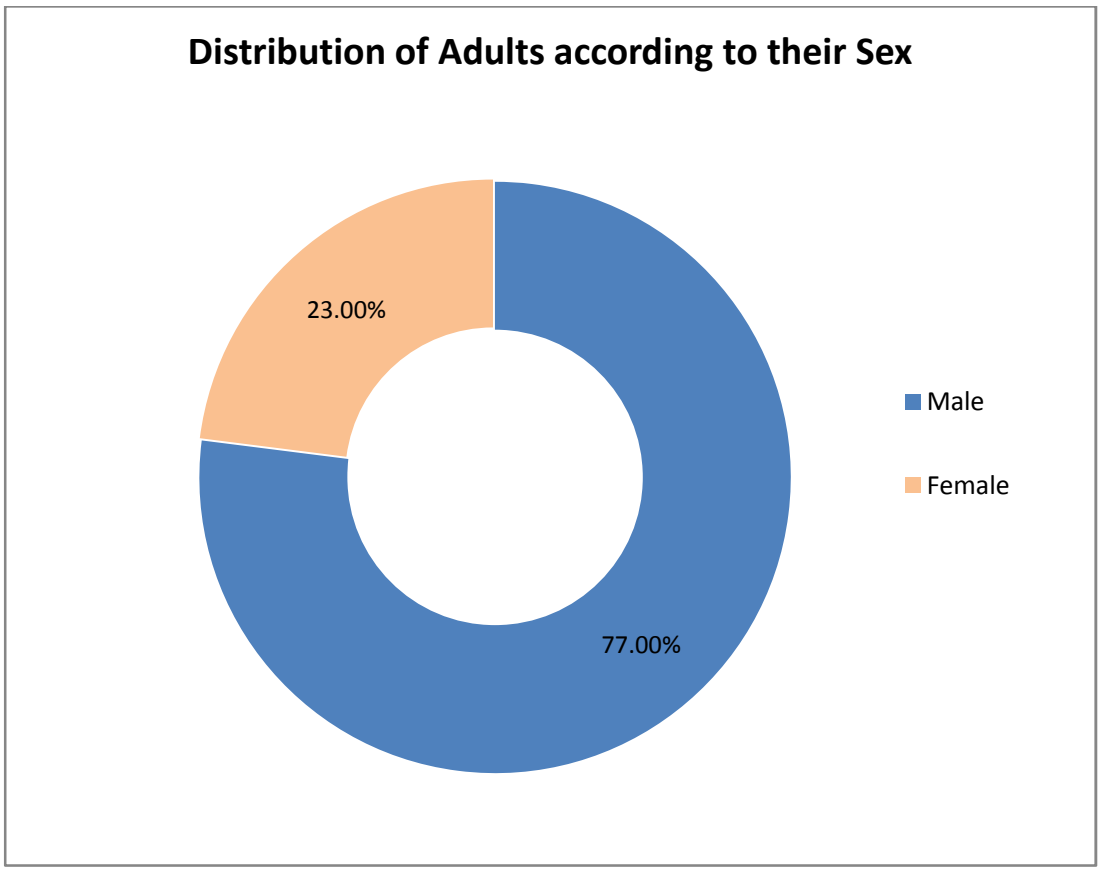
Table 1 shows the distribution of demographic variables according to their age, sex, religion marital status, educational status, occupational status, income status, residence dietary and personal habits.

Figure 5 : SIMPLE PIE DIAGRAM SHOWS PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR AGE



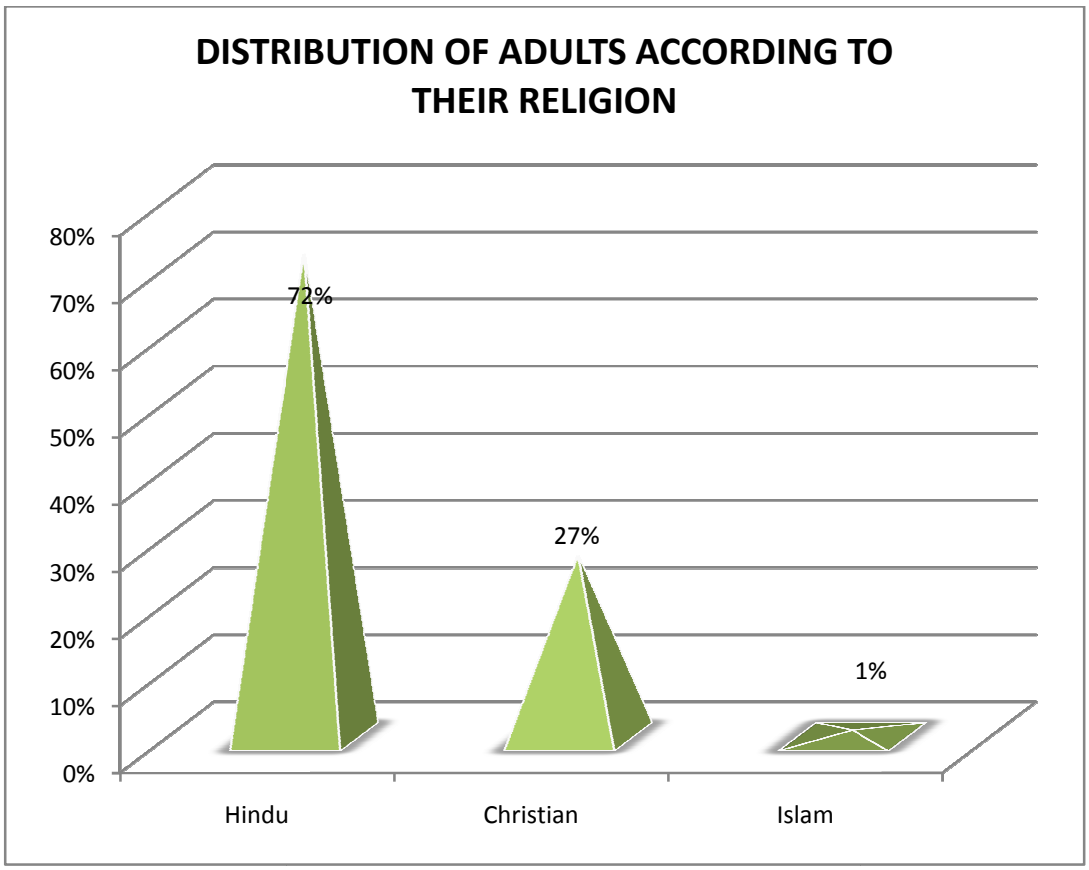
Percentage wise distribution of adults according to their age group shows the highest 37% of adults were in the age group of 56 to 65 years, 32% of adults were in the age group of 46-55 years, 18% of adults were in the age group of 36-45 years and 13% of adults belong to the age group of 25 – 35 years.

Figure 6 : SIMPLE DOUGHNUT DIAGRAM SHOWS DISTRIBUTION OF ADULTS ACCORDING TO THEIR SEX



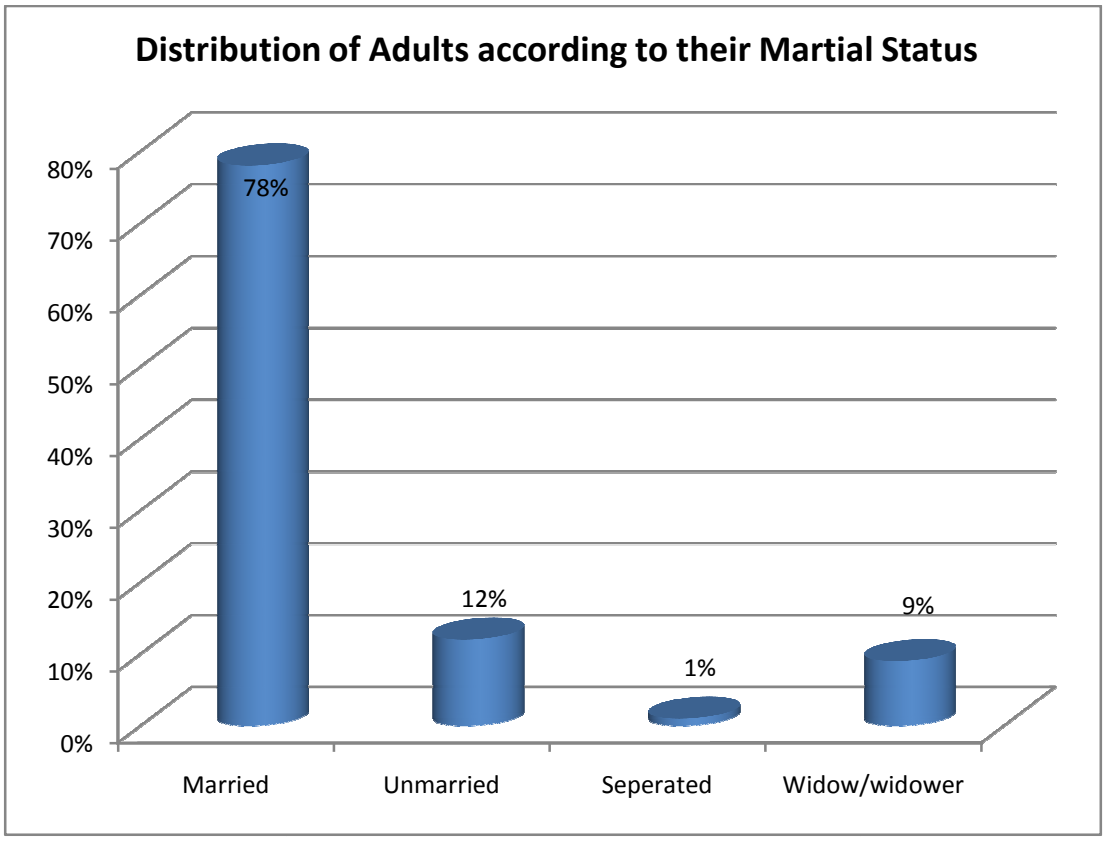
Percentage wise distribution of adults according to their sex, shows that highest 77% of adults were male and 23% of adults were females.

Figure 7: PYRAMID DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR RELIGION



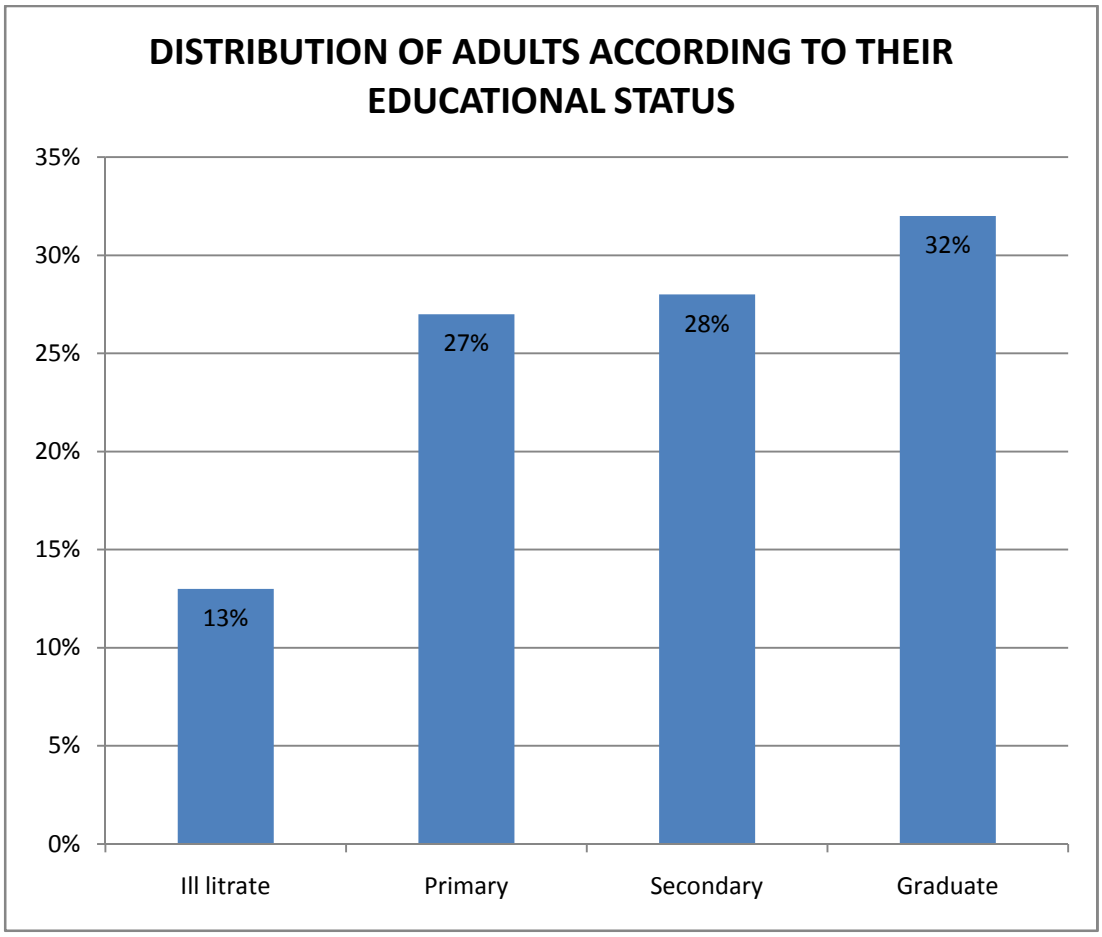
Percentage wise distribution of adults according to their religion shows that 72% of adults were Hindus and 27% of adults were Christians and 1% of adult were Islams.

Figure 8 : CYLINDRICAL DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR MARTIAL STATUS



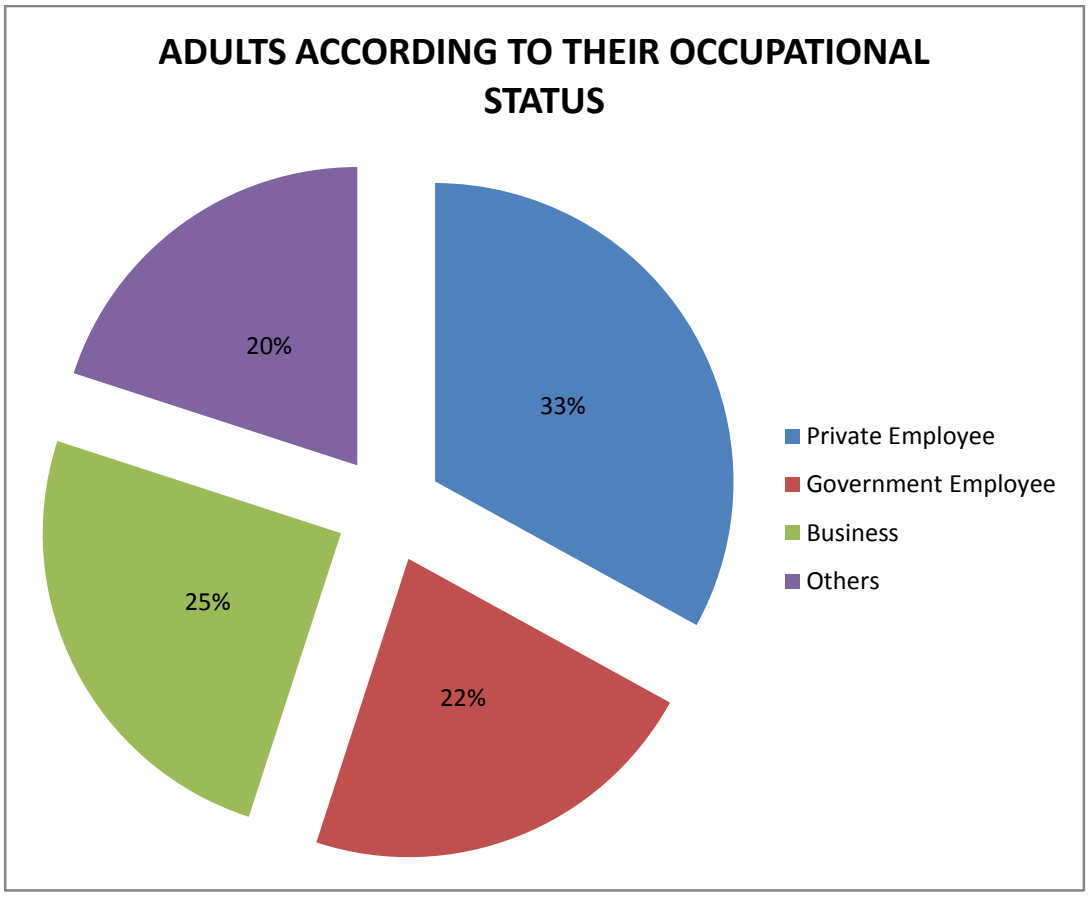
Percentage wise distribution of adults according to their marital status shows the highest 78% of adults were married and 12% of adults were unmarried and 9% of adults were in widow/widower and 1% of adult were separated.

Figure 9 : SIMPLE BAR DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR EDUCATIONAL STATUS



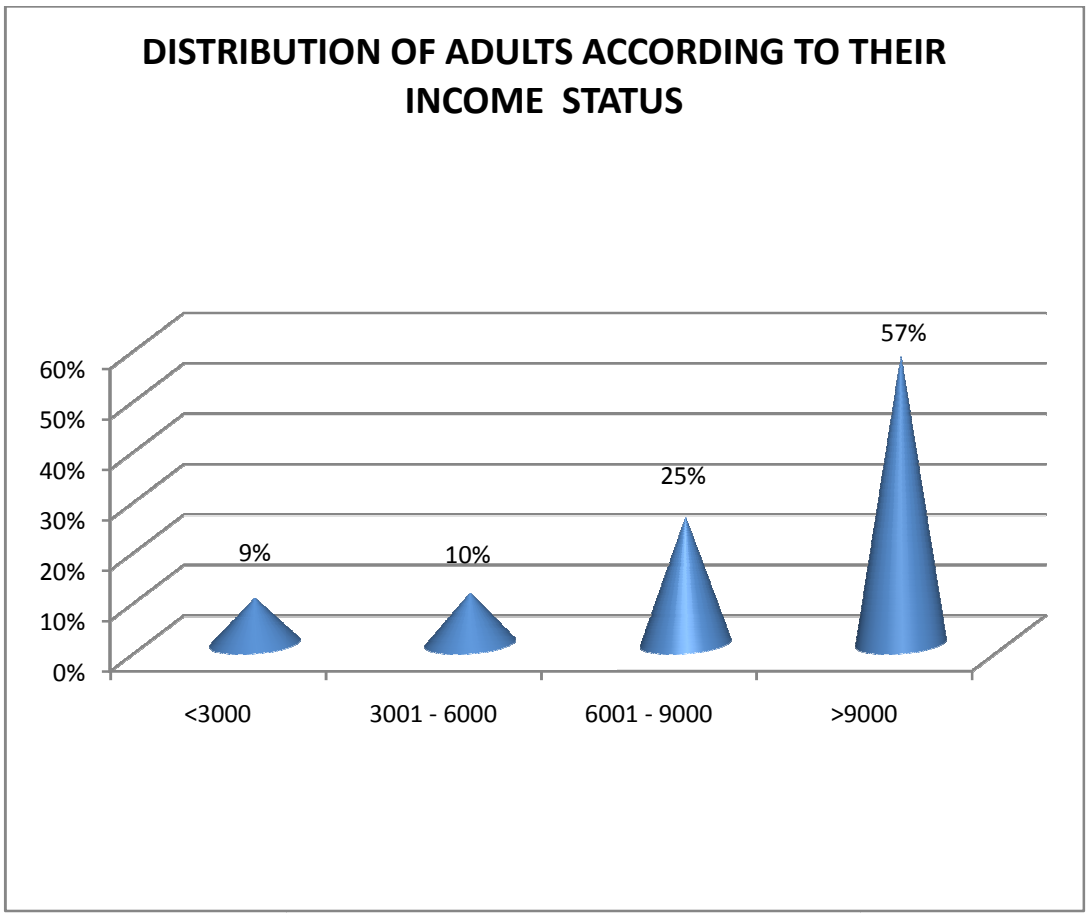
Percentage wise distribution of adults according to their Educational status shows that 32% of adults were Graduates, 28% of adults were Secondary School, 27% of adults were Primary Schools and 13% of adults were illiterates.

Figure 10 : SIMPLE PIE DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR OCCUPATIONAL STATUS



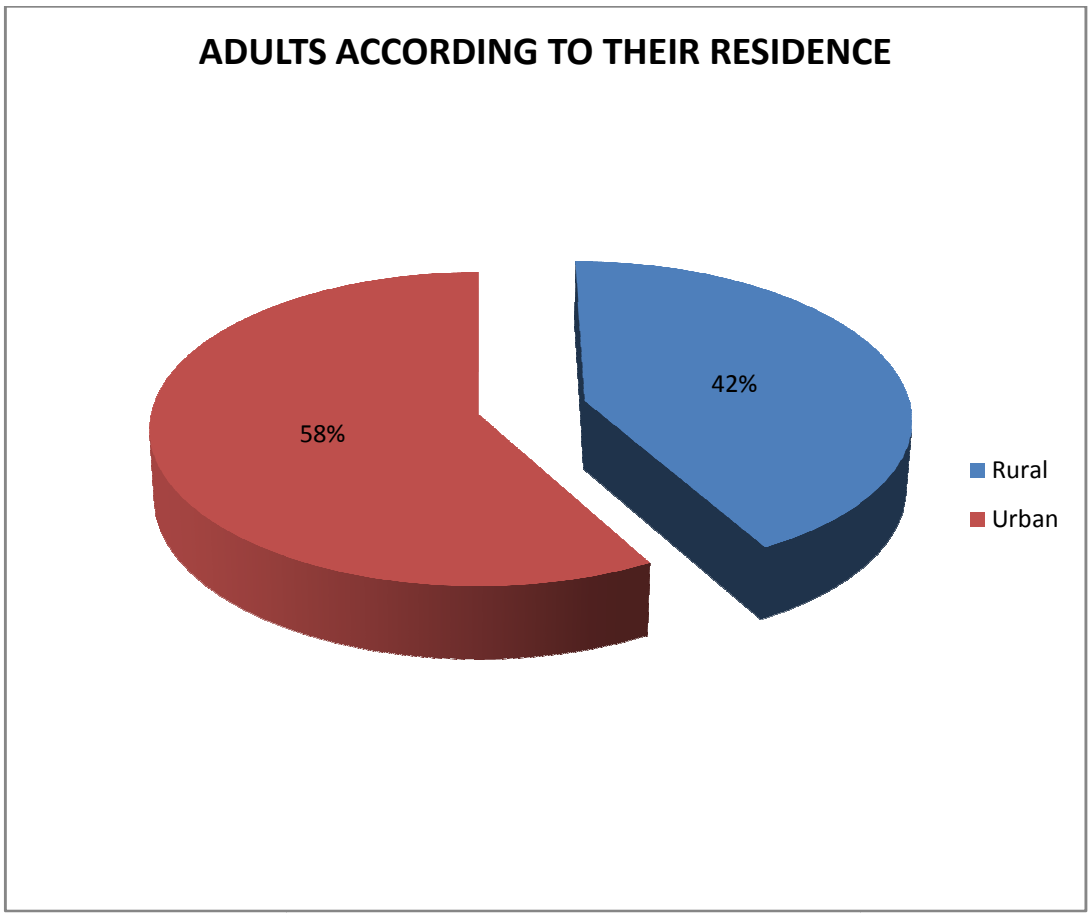
Percentage wise distribution of adults according to their occupational status shows that 33% of adults were private employees, 25% of adults were in business and 22% of adults were of government employees and 20% of adults were in others.

Figure 11 : CONE DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR INCOME STATUS



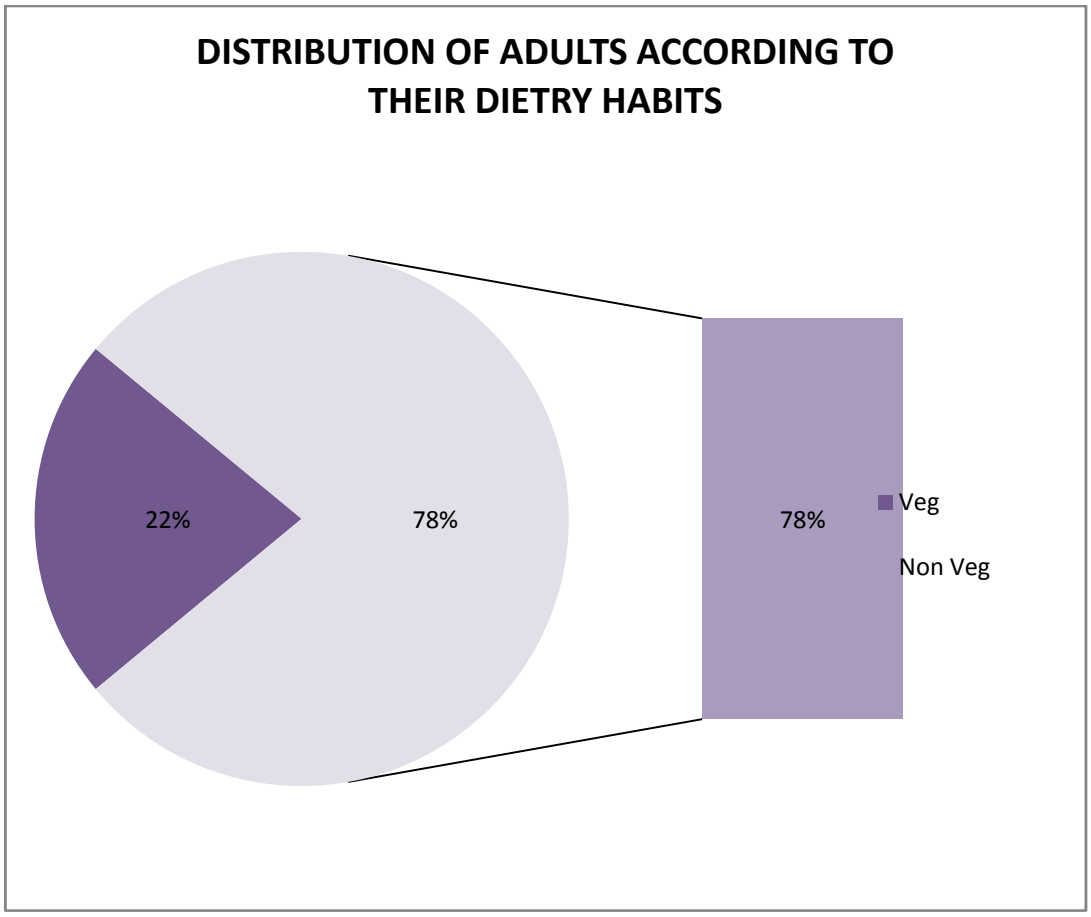
Percentage wise distribution of adults according to their Income status shows that 57% of adults earned above 9000, 25% of adults earned 6001 - 9000 and 10% of adults earned 3001 to 6000 and 8% of adults earned below 3000.

Figure 12: PIE DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR RESIDENCE



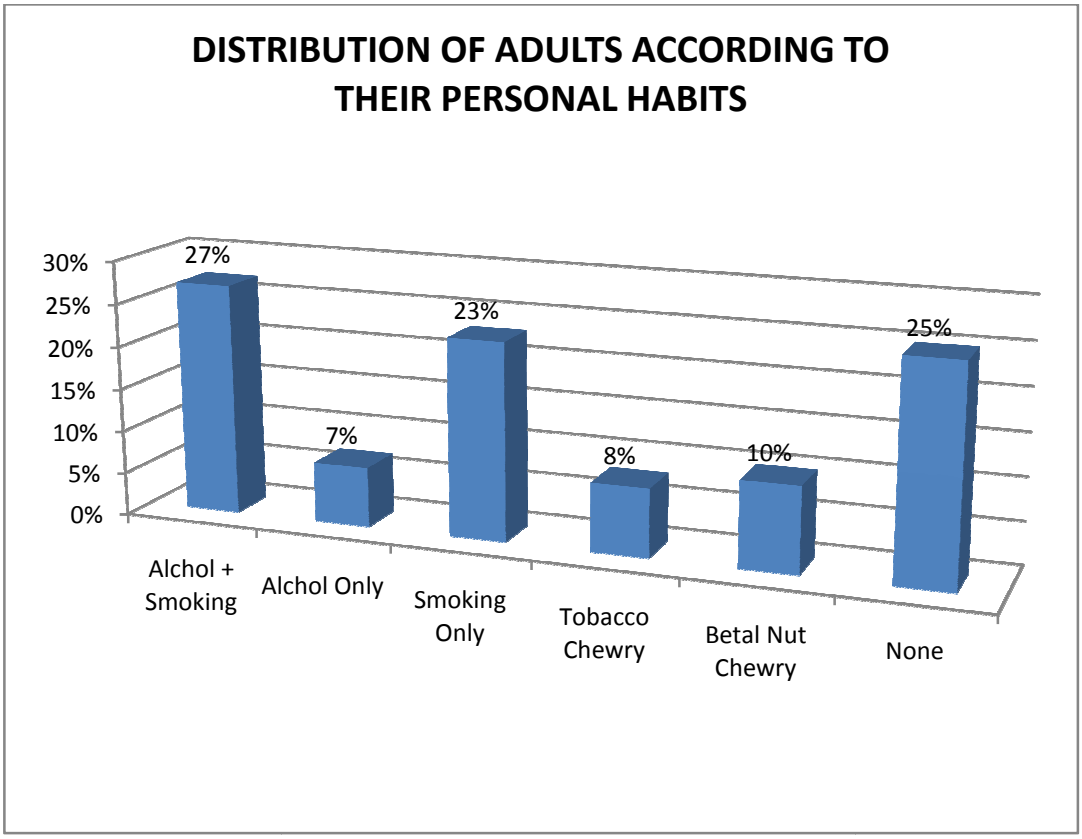
Percentage wise distribution of adults according to their Residence status shows that 58% of adults lived in Urban areas and 42% of adults lived in Rural areas.

Figure 13 : SIMPLE BAR OF PIE DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR DIETARY HABITS



Percentage wise distribution of adults according to their Dietry habits shows that 78% of adults were non vegetarian and 22% of adults were of vegetarians.

Figure 14: BAR DIAGRAM SHOWS THE PERCENTAGE WISE DISTRIBUTION OF ADULTS ACCORDING TO THEIR PERSONAL HABITS



Percentage wise distribution of adults according to their personal habits shows that 27% of adults consumed alcohol and smoking, 25% of adults consumed none, 23% of adults consuming smoking only, 10% of adults consume Betal Nut chewing, 8% of adults consume Tobacco chewing and 7% of adults consume Alcohol only.

SECTION : II

TO EVALUATE THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON POST OPERATIVE EXERCISE AMONG PATIENTS UNDERGOING CARDIOTHORACIC SURGRY

TABLE 6 : Assessment of Knowledge regarding post operative exercise of Cardio thoracic surgery using VAT

Sl. No.		No. of questions	Min. – Max score	Pretest Knowledge		Post test Knowledge	
				Mean score	%	Mean score	%
1.	Knowledge about post operative exercise of cardio thoracic surgery	20	0-20	5.51	55.1%	13.4	78.23 %
2/	Complications of cardio thoracic surgery	10	0-10	3.4	56.66 %	6.11	67.88 %

Table 2 shows the assessment of knowledge regarding post operative exercise of Cardio thoracic surgery among adults admitted in KMCH in Erode District. In pretest adults scored only poor score but in post test they scored adequate score on post operative exercise of Cardio thoracic surgery and complications.

Figure 15 : BAR DIAGRAM SHOWS PRE TEST AND POST TEST KNOWLEDGE SCORE

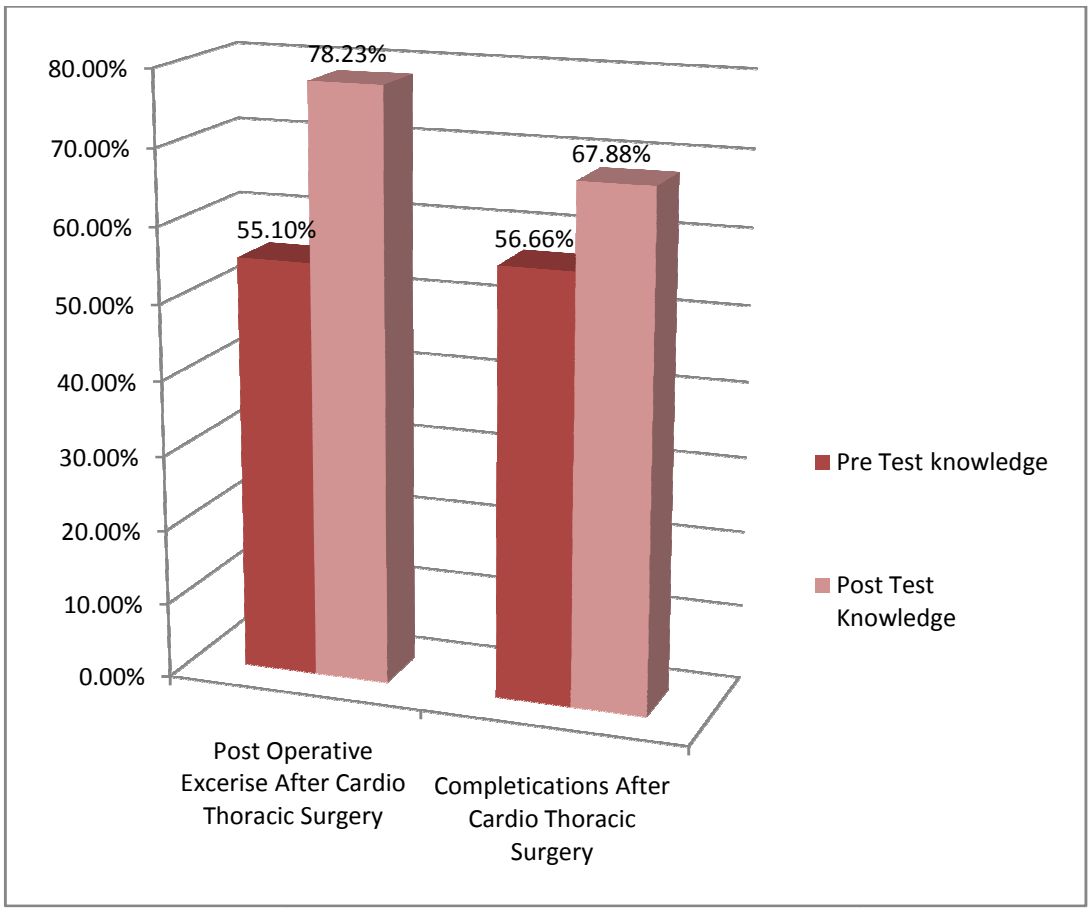


Figure No. 13 shows the aspect wise assessment of knowledge regarding post operative exercise of Cardio thoracic surgery and complications both in pre test and post test.

Table 7 : OVERALL KNOWLEDGE SCORE

	No.of questions	Min. – Max score	Pretest Knowledge		Post test Knowledge	
			Mean score	%	Mean score	%
Overall mean score	30	0-30	8.91	55.6 %	19.41	74.7%

Table 7 shows the adults pre test and post test overall knowledge score on post operative exercise of Cardio thoracic surgery and complications among adults admitted in KMCH in Erode District.

Overall knowledge score shows the improvement of their knowledge from 55.6% to 74.7%.

Figure 16 : CYLINDRICAL DIAGRAM SHOWS OVERALL KNOWLEDGE SCORE

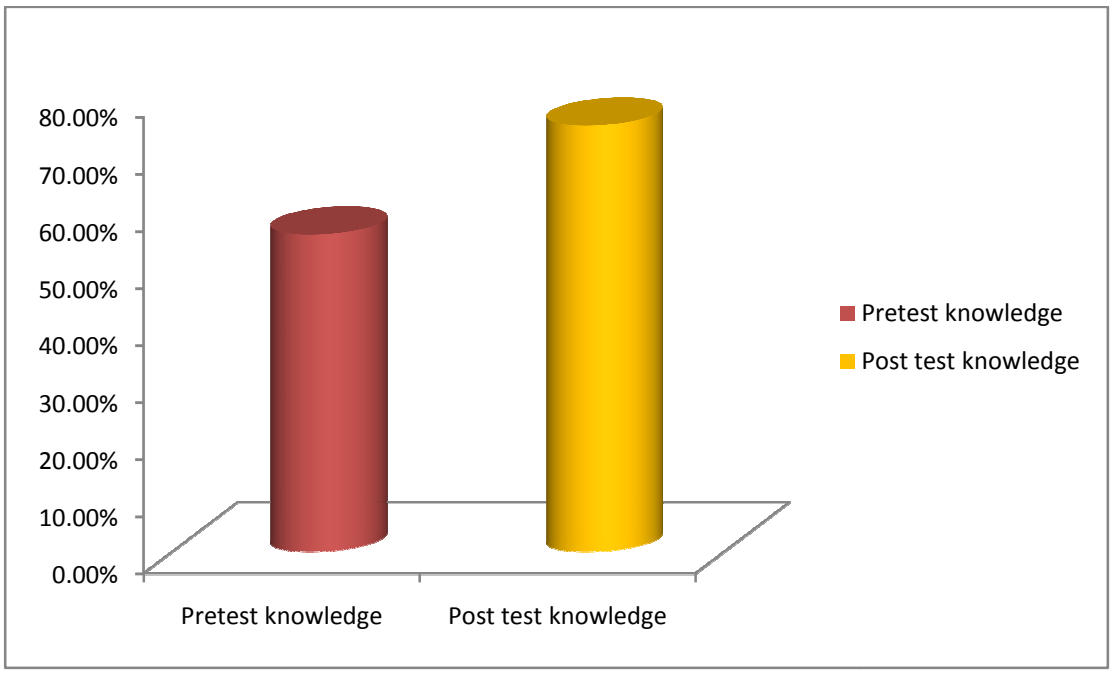


Table 8 : Comparison knowledge level of Patients before and after Video Assisted Teaching Programme

The comparison of pre test and post test knowledge level

LEVEL OF KNOWLEDGE	PRETEST	POST TEST
Inadequate	34 (57%)	0
Moderately Adequate	26 (43%)	20 (33%)
Adequate	0	40(67%)

The comparison of the values of pre test and post test knowledge level depicted in the table 4 shows that the knowledge level was 34(57%) inadequate in pre test and 0% in Post test.

Moderately adequate is 26(43%) present in pre test and 20(33%) in post test and Adequate 0% in pre test and it increases to 40(67%) in post test.

Figure 17 : CLUSTERED CONE DIAGRAM SHOWS LEVEL OF KNOWLEDGE

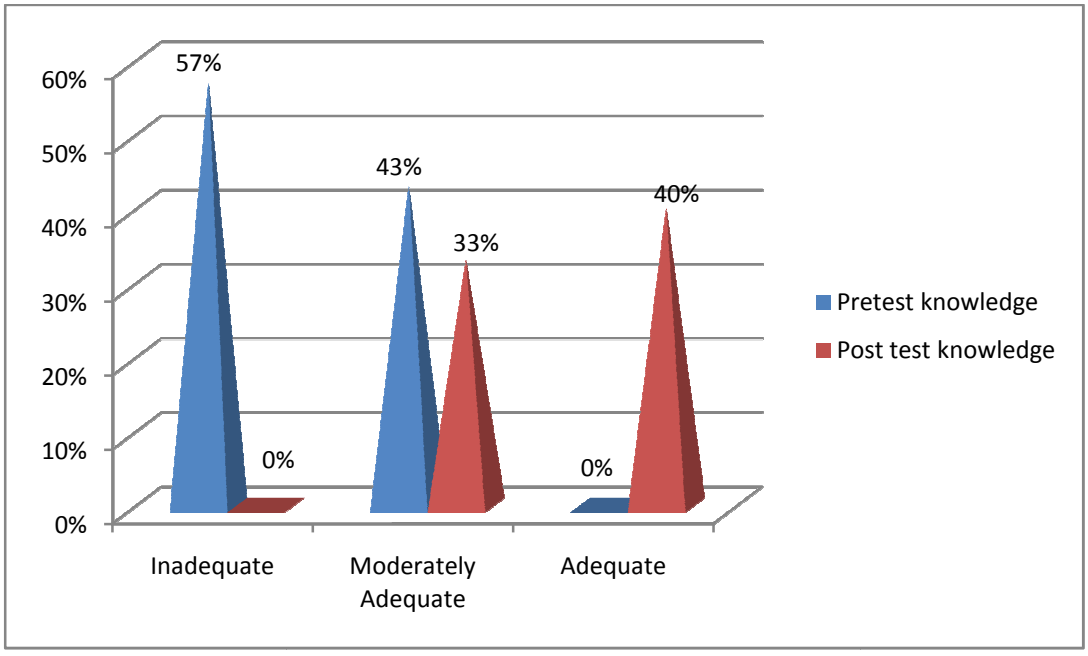


Figure 9 shows the level of knowledge of adults both in pretest and post test.

Table 9 ; **Comparison of pretest and post test knowledge score**

Knowledge	Pre test knowledge		Post test knowledge		Students paired "t" test
	Mean	SD	Mean	SD	
Post operative exercise after cardio therocic surgery	**5.51**	**2.220**	**13.30**	**2.190**	**t = 22.813 p<0.0001 significant**
Complication	**3.4**	**1.532**	**6.11**	**1.573**	**t = 7.582 P<0.0001 Significant**

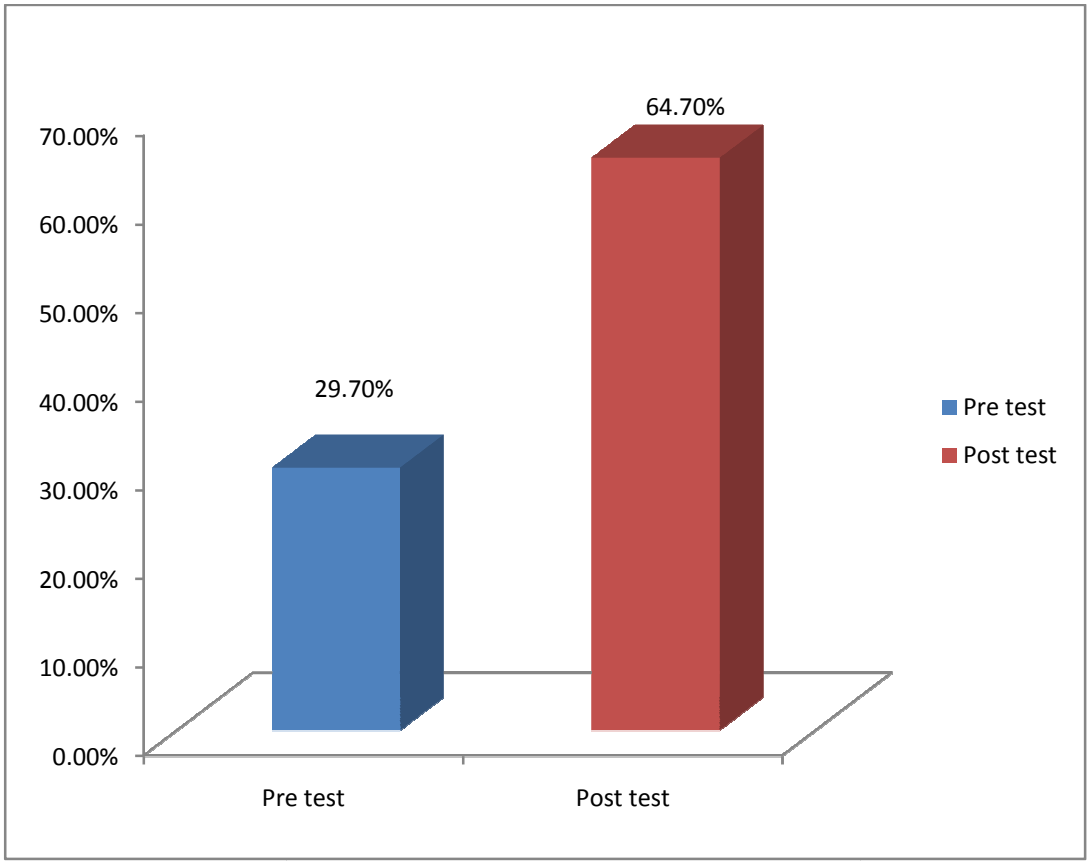
Table 5 compares the pre and post test knowledge score. It shows, there is a significant difference between pretest and post test score of adults knowledge on all aspects of post operative exercise after cardiothoracic surgery and complications. It was analyzed using student paired **t** test.

Table No. 10: EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME

	Pre test	Post test
Knowledge	29.7%	64.7%

Table 6 shows the effectiveness of the video assisted teaching programme considering the overall knowledge score of 29.7% in pretest and 64.7% in post test was found the administration of video assisted teaching programe.

Figure 18: BAR DIAGRAM SHOWS EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAM



SECTION : III

TO FIND OUT THE ASSOCIATION BETWEEN PRE TEST LEVEL OF KNOWLEDGE ON POST OPERATIVE EXERCISE AMONG PATIENTS UNDERGOING CARDIO THORACIC SURGERY WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Table No. 11 : ASSOCIATION BETWEEN PRE TEST KNOWLEDGE WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Demographic variables		Level of knowledge				Chi square test values
		Inadquate		Moderately adequate		
		F	%	F	%	
Age group	26 – 35	3	5%	5	8.33%	=1.752 P>0.05 Not significant
	36 – 45	5	8.33%	4	6.66%	
	46 – 55	13	21.66%	7	11.66%	
	56 – 65	13	21.66%	10	16.6%	
Sex	Male	27	45%	19	31.66%	=1.752 P>0.05 Not significant
	Female	7	11.66%	7	11.66%	
Religion	Hindu	24	40%	20	33.33%	=0.933 P>0.05 Not significant
	Christian	10	16.66%	5	8.33%	
	Islam	0	0	1	1.66%	
Martial status	Unmarried	01	1.66%	4	6.66%	=5.475 P>0.05 Not significant
	Married	31	51.66%	18	30%	
	Separated	0	0	1	1.66%	
	Widow/Widower	2	3.33%	3	5%	

Educational Status	Illiterate	4	6.66%	4	6.66%	= -1.309 P<0.05 **Significant**
	Primary School	10	16.66%	6	10%	
	Secondary School	11	18.33%	5	8.33%	
	Graduate	9	15%	11	18.33%	
Occupational status	Govt.Emp	3	5%	10	16.6%	=9.937 P>0.05 Not significant
	Private Emp	11	18.33%	8	13.33%	
	Business	13	21.66%	3	5%	
	Others	7	11.6%	5	8.33%	
Income status	Below 3000	2	3.33%	3	5%	=7.632 P>0.05 Not significant
	3001-6000	4	6.66%	2	3.33%	
	6001-9000	10	16.6%	4	6.66%	
	Above 9000	18	30%	17	28.33%	
Residence	Rural	14	23.33%	12	20%	=0.1492 P<0.05 **Significant**
	Urban	20	33.33%	14	23.33%	
Dietry Habit	Vegetarian	6	10%	6	10%	=0.2701 P<0.05 **Significant**
	Non Vegetarian	28	46.66%	20	33.33%	
Personal Habits	Alcohol+Smoking	7	11.6%	6	10%	=1.4379 P>0.05 Not significant
	Alcohol only	4	6.66%	2	3.33%	
	Smoking only	8	13.33%	7	11.6%	
	Tobacco chewing	3	5%	1	1.66%	
	None	8	13.33%	8	13.33%	

Table No. 7 shows the association between demographic variables and the pretest level of knowledge

Figure 19 : BAR DIAGRAM SHOWS ASSOCIATION BETWEEN AGE AND LEVEL OF KNOWLEDGE

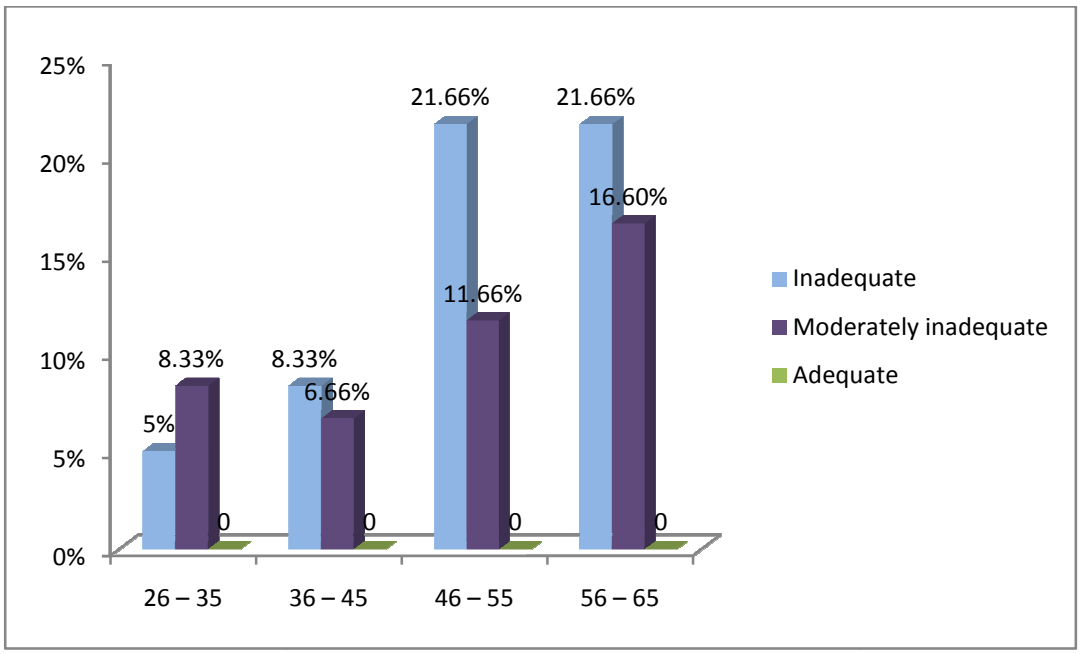


Figure 20 : CYLINDRICAL DIAGRAM SHOWS ASSOCIATION BETWEEN SEX AND LEVEL OF KNOWLEDGE

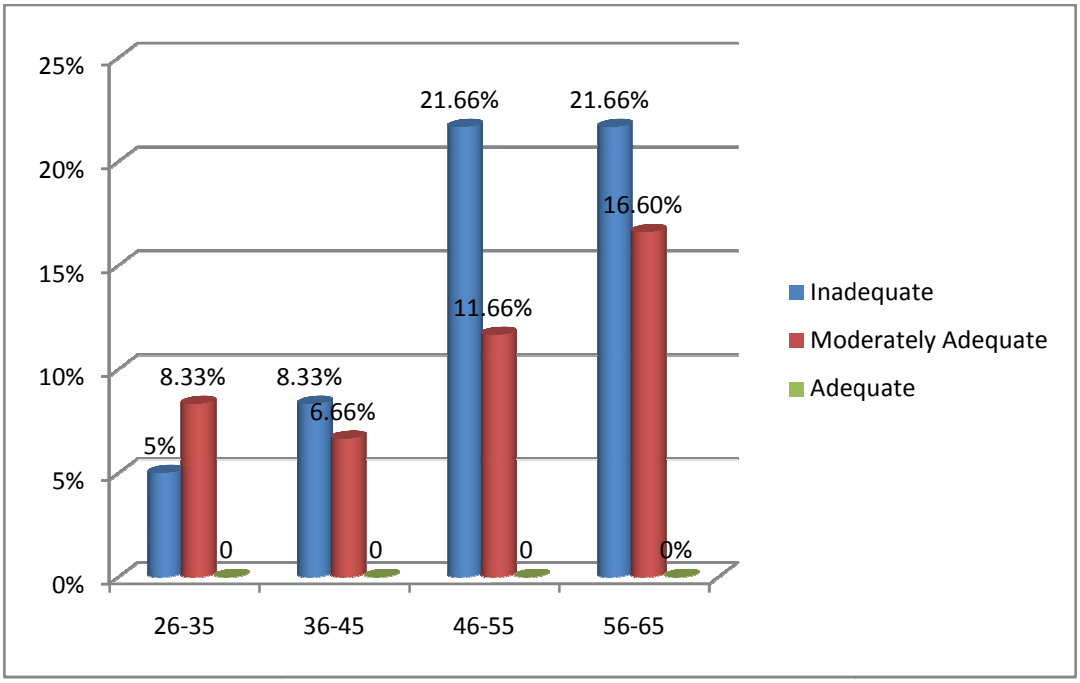


Figure 21 : CLUSTERED CONE DIAGRAM SHOWS ASSOCIATION BETWEEN RELIGION AND LEVEL OF KNOWLEDGE

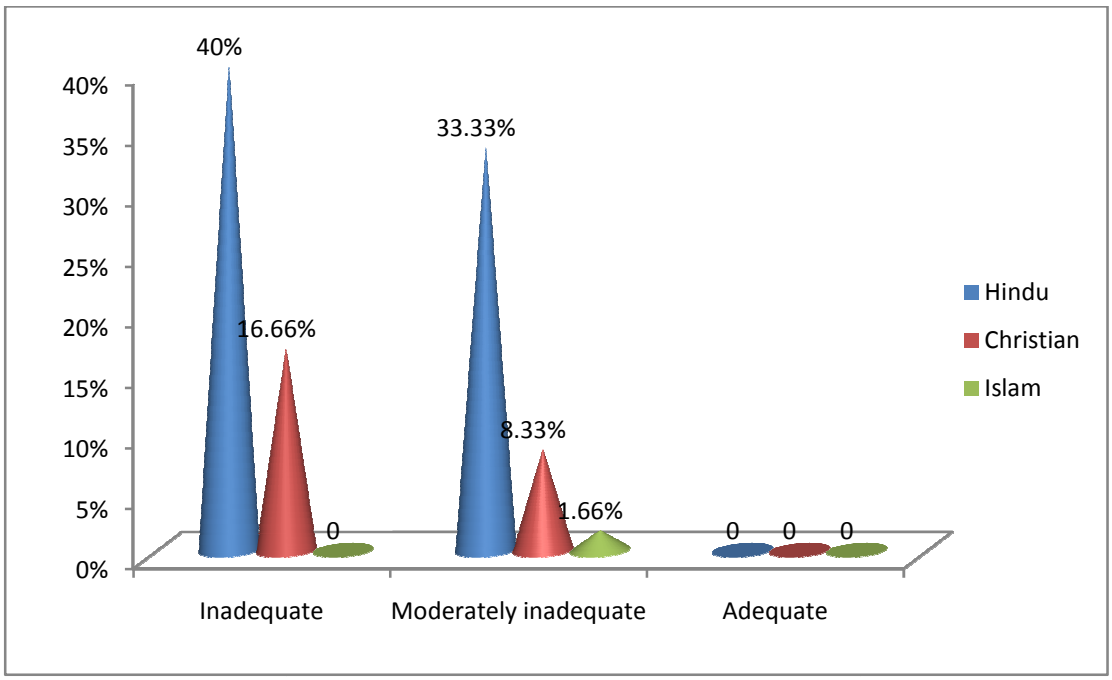


Figure 22 : CLUSTERD CONE DIAGRAM SHOWS ASSOCIATION BETWEEN MARITAL STATUS AND LEVEL OF KNOWLEDGE

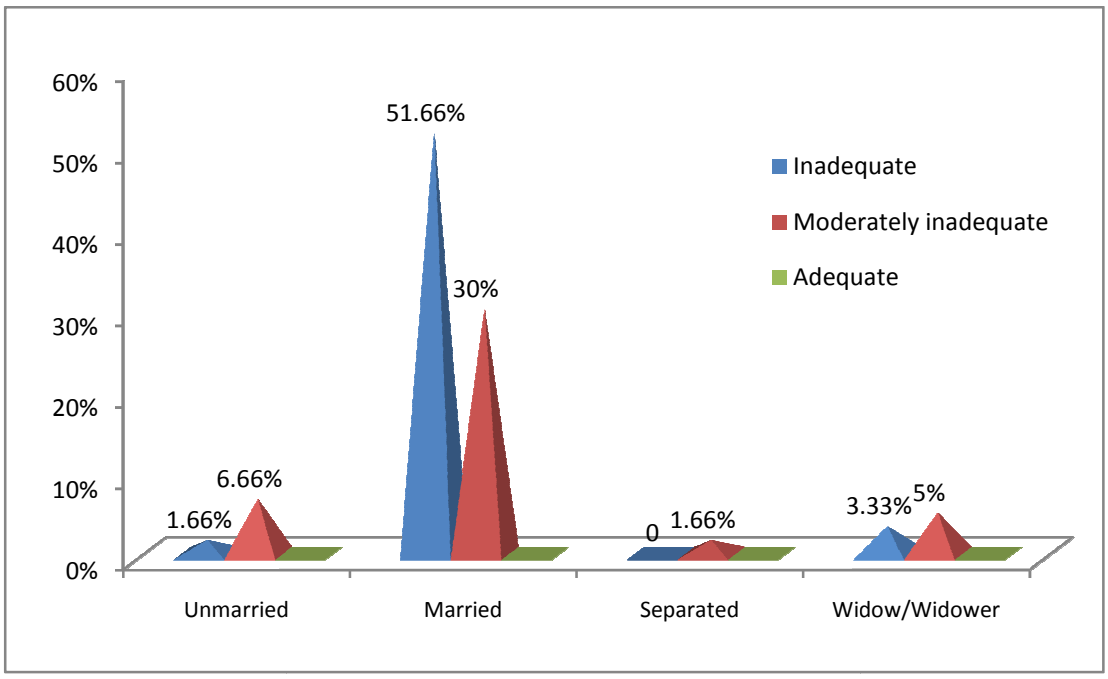


Figure 23 : CLUSTERED CONE DIAGRAM SHOWS ASSOCIATION BETWEEN EDUCATIONAL STATUS AND LEVEL OF KNOWLEDGE

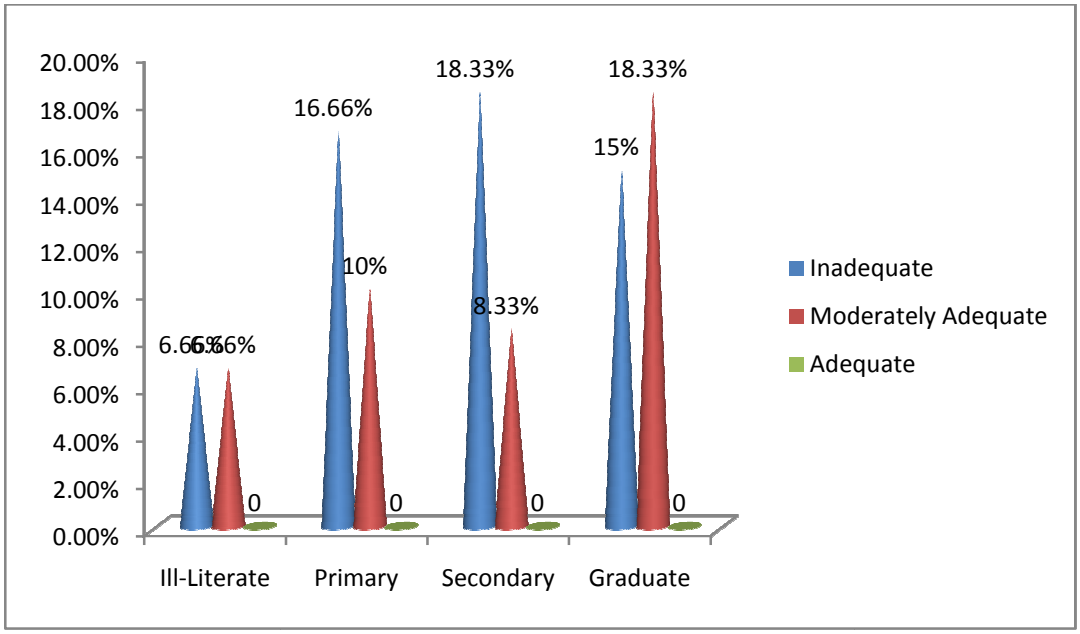


Figure 24 : BAR DIAGRAM SHOWS ASSOCIATION BETWEEN OCCUPATIONAL STATUS AND LEVEL OF KNOWLEDGE

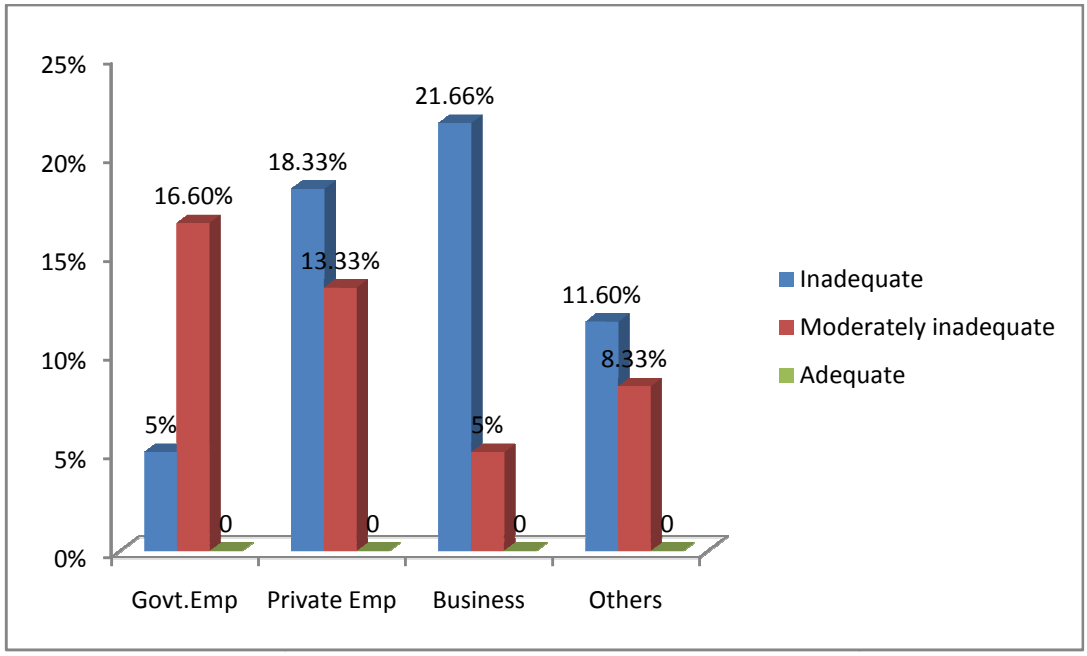


Figure 25 : BAR DIAGRAM SHOWS ASSOCIATION BETWEEN INCOME STATUS AND LEVEL OF KNOWLEDGE

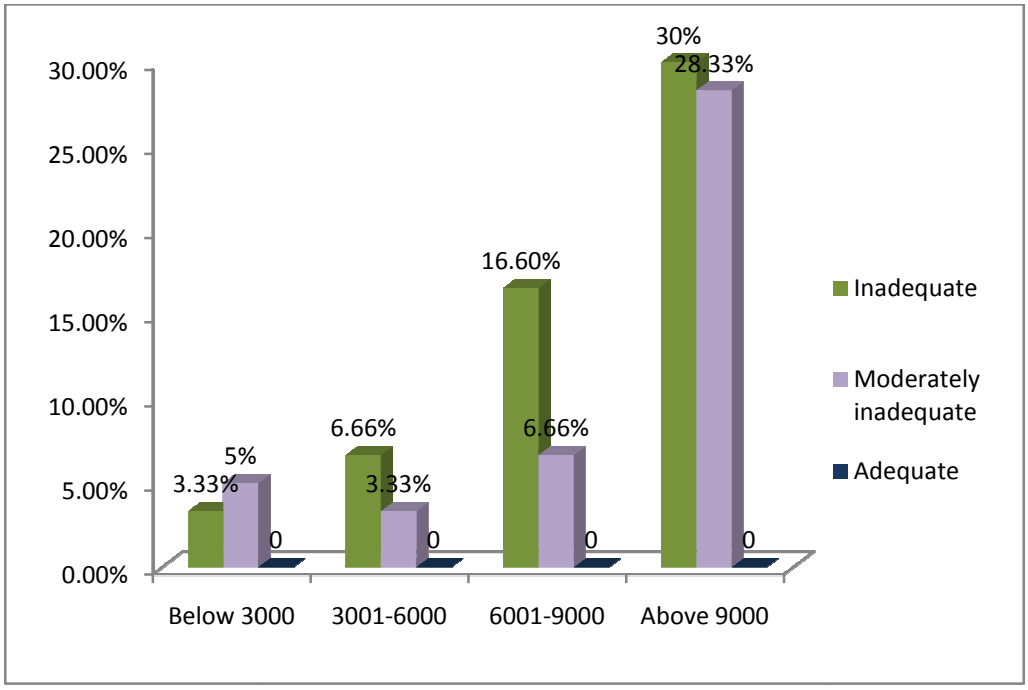


Figure 26 : PIE DIAGRAM SHOWS ASSOCIATION BETWEEN RESIDENCE AND LEVEL OF KNOWLEDGE

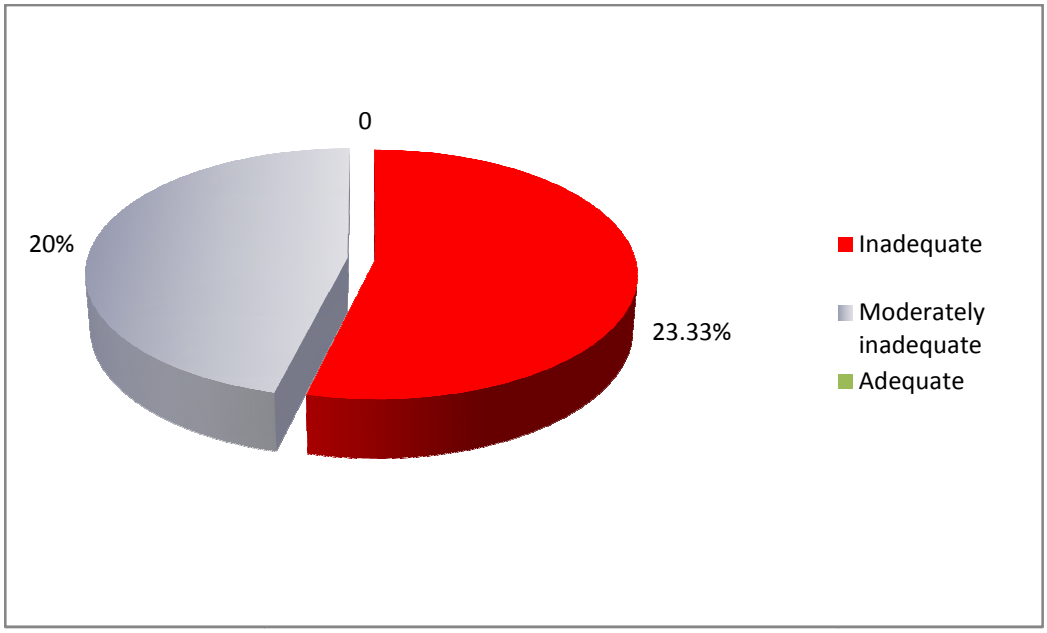


Figure 27 : CYLINDRICAL DIAGRAM SHOWS ASSOCIATION BETWEEN DIETARY HABITS AND LEVEL OF KNOWLEDGE

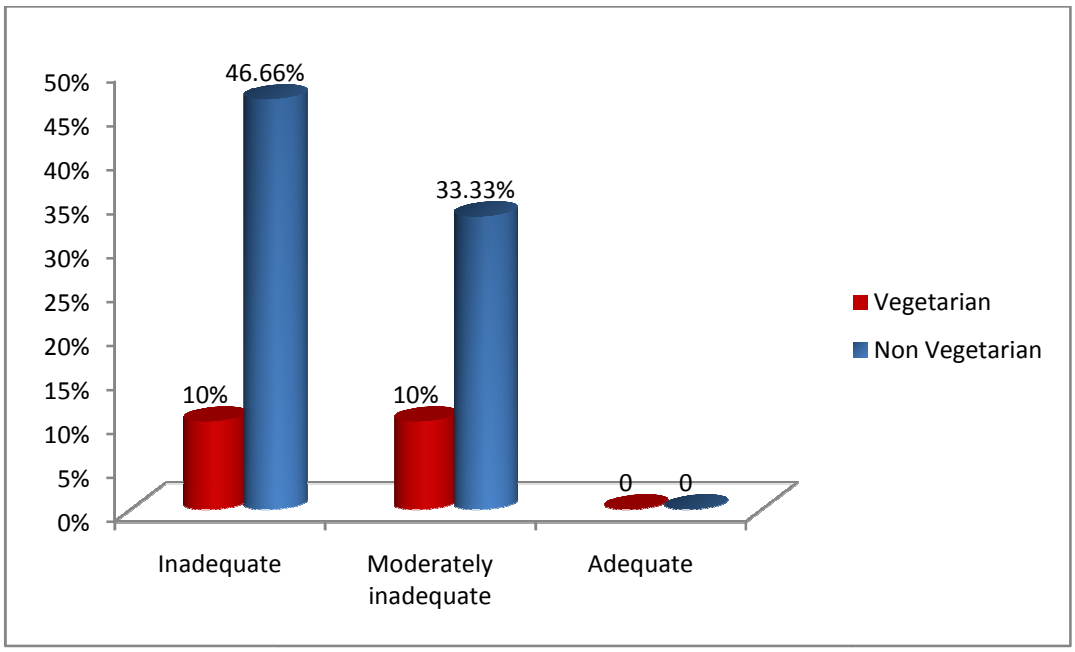
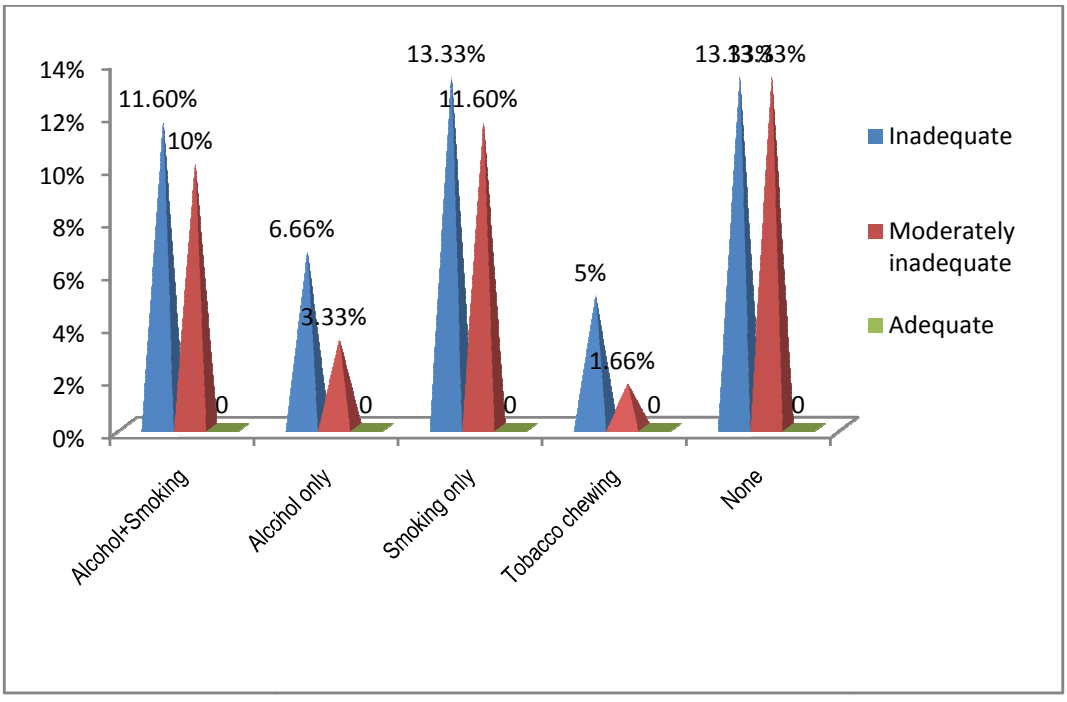


Figure 28 : CLUSTERED CONE DIAGRAM SHOWS ASSOCIATION BETWEEN PERSONAL HABITS AND LEVEL OF KNOWLEDGE



CHAPTER – V

DISCUSSION

This chapter discusses the main findings of the research study and reviews that in relation to the finding from the results of the pretest study regarding knowledge on video assisted teaching programme on post operative exercises after cardio thoracic surgery.

The total sample collected were 60, who underwent cardio thoracic surgery. The study shows the effectiveness of video assisted teaching program on post operative exercise in pretest and post test among cardio thoracic surgery patients. The demographic variables were age, sex, religion, marital status, educational status, occupational status, income status, residence, diet and personal habits.

The first objective of the study was to assess the knowledge level of knowledge regarding post operative exercise among patient undergoing cardio thoracic surgery.

The table showed that the pretest knowledge score among post operative exercise after cardio thoracic surgery was 55.1% and complications after cardio thoracic surgery was 56.66%.

Post test knowledge score among post operative exercise after cardio thoracic surgery was 78.23% and complications after cardio thoracic surgery was 67.88%.

Pre test overall knowledge score about post operative exercise and complications after cardio thoracic surgery was 55.6%.

Post test overall knowledge scores about post operative exercise and complications of cardio thoracic surgery was 74.95%

The second objectives was to evaluate the effectiveness of video assisted teaching programme on post operative exercise among patient undergoing cardio thoracic surgery.

The main knowledge score between pretest (8.91) and post test (19.41) standard deviation of pretest is 3.752 and post test is 3.763 the obtained t value 15.19 df=(59) which was found significant at 0.05 level.

The mean post test knowledge score regarding post operative exercise after cardio thoracic surgery among adults will be significantly higher than the pretest knowledge score among adults after video assisted teaching programme. So Hypothesis H1 was accepted.

The third objective was to find out the association between pre test level of knowledge on post operative exercise among patient undergoing cardio thoracic surgery with the selected demographic variables.

The table showed that there is no significant association between the knowledge and demographic variables (Age, Sex, Religion, Marital Status, Occupation status, Income status and personal habit) of adults at $p>0.005$ levels.

Moreover, there is significant association between knowledge and demographic variables (educational status, Residence, Dietry habit) of adults at $p>0.005$.

CHAPTER – VI

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The chapter represents a brief summary of the study conclusions and implications for nursing and recommendations.

The conceptual frame work adopted for this study was, Ludwig Von Bertaianfy's model (1969). The purposive sampling was used for selecting the sample in this study it review of literature was general information on post operative exercise and its complications then this study related to knowledge of post operative exercise and complications of patients admitted in KMCH, Erode.

Descriptive statistics (frequency, percentage, mean, and standard deviation inferential statistics chi-square was used to analyze the data and to test the hypothesis.

The primary aim of the the study was to identify the level of knowledge regarding Post operative exercise after administration of video assisted teaching program in the experimental group and foundout association between knowledge of post operative patients and demographic variables of the cardio thoracic surgery patients.

The major findings of the study related to demographic variables.

- The findings of the study showed that, among the maximum number of the adults, 22% were in age group of 56-65 years, and 8% were in age group of 25-35% years who have also affected in volvular disease.

- The proportion of 77% are male and 33% are female.

- The proportion of 72% are Hindus, 27% are Christians and whereas 1% are Islams.

- The overall proportion of marital status shows, 78% are married 12% are unmarried 0.1% are separated and 9% are widows.

- The overall proportion of educational status shows, 32% were in graduates, 28% underwent secondary school, 27% underwent primary school and 8% were in illiterates.

- The overall proportion of occupational status shows, 33% were private employees, 25% were doing business, 22% were government employees and 20% were others.

- The overall proportion of income status shows, 57% earning above Rs. 9,000/-, 25% earning Rs. 6001/- to 9000/-, 10% earn Rs. 3001-6000/- and 8% were earning below Rs.3000/-

- The overall proportion of residence shows, 58% are Urban area and 42% are in Rural area.

- The overall proportion of dietary habit shows 78% were in non-vegetarians and 22% are in vagetarians.

- The overall proporption of personal habits shows, 27% consume alcohol and smoking, 23% consume smoking only and 10% consumes betalnuts only, and 8% consume tobacco chewing, and 7% consumes alcohol only and whereas 25% consume none of the above.

Major Findings related to Effectiveness of Video Assisted Teaching Program.

- The findings of the study showed that 34(57%) respondents had inadequate knowledge in pre-test and whereas none of them had inadequate knowledge on post test.

- The findings of the study showed that 26(43%) respondents had moderate knowledge in pretest and whereas 20(33%) respondents had moderate knowledge in posttest.

- None of the patients had adfequate knowledge in pretest whereas, in the post test 40(67%) respondents had adequate knowledge.

- The overall post test knowledge mean score of 75% on post operative exercise after cardio thoracic surgery is comparatively more than their pretest knowledge score which has 55.6%. It is confirmed that there was increase in knowledge after the video assisted teaching programme.

- The paired ‘t’ test analysis of the post test knowledge score is 30.4 was found highly significant the result evidently supports the effectiveness of video assisted

teaching program in post operative exercises after cardio thoracic surgery and post operative complications.

Major findings related to relationship between socio demographic variables and pretest knowledge score:

- The present study revealed that, there is association between knowledge to education, residence and dietary habits.
- There is no association between knowledge and of age, sex, religion, marital status, occupational status, income status and personal habits.

CONCLUSION

The following conclusions are drawn from the finding of the study. No cardio thoracic surgery patients have adequate knowledge regarding post operative exercise after cardio thoracic surgery. After administration of video assisted teaching program, the knowledge score was improved. The video assisted teaching program is found to effective in terms of gain in knowledge. So the video assisted teaching program is effective in improving the knowledge of cardio thoracic surgery patients.

IMPLICATIONS OF THE STUDY

The findings of the study have implications in various areas of nursing profession i.e., nursing, practice, nursing education, nursing administration and nursing research.

Nursing Practice:

A nurse can play an important role to enhance the importance of post-operative exercises after cardiac surgery. Nurse can also help the people to cope up with the problems associated with complications of cardiac surgery and improve the quality of life of people as a teacher, counselor and facilitator. Researcher encourage the patients to follow the proper diet, medication, involve in resuming activities and regular exercise. The nurse should conduct teaching programme on the importance of post-operative exercises after cardiac surgery in the wards as well as in the community area to improve the knowledge of the patients. Nursing students also should be educated about the importance of post-operative exercises, after cardiac surgery to provide proper care to the patient.

Nursing Education:

Post-operative care of cardiac patients places high demand on cardiac rehabilitative measures and nursing care to promote the quality of life. The nursing students must be able to understand the complete care of cardiac surgery patients and know about the complications and their prevention. Health education programme can conducted in cardio-thoracic intensive care units and medical and surgical wards to enhance the knowledge of post-operative exercises. If the students have an adequate knowledge regarding post-operative exercises, they will be able to motivate the patients, in clinical setup by applying their theoretical knowledge into real practical life.

Nursing Administration:

The findings of the study indicates the need for conducting in service education and traning programme for practicing nurses to create awareness in preventing complications among cardiac surgery patients. The nurse administrator can conduct a workshop and possibly make students and nursing staff to participate in awareness. The nurse should prepare, case presentation, clinical presentation, nursing rounds, clinical demonstration, on importance of post-operative exercises with the preparation of pamphlet for the benefit of patients.

Nursing Research:

There should be a more scope for research in the knowledge and practice of post-operative exercises. Study reveals that overall knowledge of subjects regarding post-operative exercises were not up to expectations. It reveals that a greater need for nurses to conduct an awareness and teaching programme regarding treatment of post-operative exercises of cardio thoracic patients. This would be promoting awareness of the patient and improved their knowledge on importance of post-operative exercises.

Suggestions:

- Health education planned for the clients admitted in KMCH hospital at Erode.
- Updating knowledge about post operative exercise.
- Periodical evaluation in hospital settings and ensure adequate knowledge among cardiac patients.

RECOMMENDATIONS

The following recommendations were drawn based on the findings of this study.

- A similar study can be conducted for large group of sample and findings can be generalized.
- A study can be conducted among care takers of cardiac surgery patients to assess their knowledge on post-operative exercises after cardiac surgery.
- A similar study can be conducted among patients who are undergoing gastric surgery.
- A similar study can be conducted by involving students during educational programme.
- A similar study can be conducted in cardiac clinic, in outpatient set up.

Limitations

The present study has the following limitations.

- Study was conducted only in adults.
- Adults who could communicate in Tamil and English were included in this study.
- The study was limited to adults admitted in KMCH at Erode.
- The study was limited to measure the knowledge of adults regarding post operative exercise after cardio thoracic surgery.

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APPENDIX

SEMI STRUCTURED INTERVIEW SCHEDULE

SECTION – A

SOCIO-DEMOGRAPHIC VARIABLES

1. Age in years

a 25 --35 yrs [ ]

b) 36 - 45 yrs [ ]

c) 46 - 55 yrs [ ]

d) 56 65 yrs [ ]

2. Sex

a) Male [ ]

b) Female [ ]

3. Religion

a) Hindu [ ]

b) Christian [ ]

c) Islam [ ]

4. Marital Status

a) Unmarried [ ]

b) Married [ ]

5. Educational Qualification

a) Illiterate [ ]

b) Primary School [ ]

c) Higher secondary [ ]

d) Graduate [ ]

6. Occupation

a) Private employee [ ]

b) Government employee [ ]

c) Business [ ]

d) Others [ ]

7. Family Income

a) Below Rs. 3000/- [ ]

b) Rs.3001-6001/- [ ]

c) Rs.6001-9001/- [ ]

d) Above Rs.9001/- [ ]

8. Place of Residence

a) Rural [ ]

b) Urban [ ]

9. Dietary habit

a) Vegetarian [ ]

b) Non – Vegetarian [ ]

10.Personal Habit

a) Alcoholism [ ]

b) Smoking [ ]

c) Alcoholism & smoking [ ]

d) Tobacco chewing [ ]

e) Betel nut chewing [ ]

f) None [ ]

SECTION – B

STRUCTURED QUESTIONNAIRE ON KNOWLEDGE REGARDING POSTOPERATIVE EXERCISE AMONG PATIENTS UNDERGOING CARDIOTHORACIC SURGERY

PART - I [REGARDING POST OPERATIVE EXERCISE]

1. What is mean by Post – Operative Exercise?

a) Exercises performed by the Patient immediate after surgery. [ ]

b) Exercises performed by the Patient after one week. [ ]

c) Exercises performed by the Patient after one month. [ ]

d) Exercises performed by the Patient before the surgery [ ]

2.What is the purpose of post –Operative exercise?

a) To re- establish the patient's physiological Equilibrium [ ]

b) To remote healing of the surgical incision [ ]

c) To prevent post operative complications [ ]

d) All the above [ ]

3. What are the exercises to be performed <u>immediately after recovery</u>?

a) Deep breathing Exercise with breathing device [ ]

b) Coughing exercises & arm exercises [ ]

c) Elbow flexion & Elbow circle [ ]

d) All the above [ ]

4. What is the most comfortable position used while performing deep breathing exercise?

a) Semi – fowler's position [ ]

b) Sitting position [ ]

c) Standing position [ ]

d) Lying position [ ]

5. What is the appropriate time to do deep breathing exercise?

a) Before go to bed [ ]

b) Early morning [ ]

c) Before mealtime [ ]

d) All the above [ ]

6. What is the purpose of using breathing device in cardiac surgery patients?

a) It improves pulmonary ventilation [ ]

b) It facilitates respiratory gaseous exchange [ ]

c) Increase oxygen level in the body [ ]

d) All the above [ ]

7. How many balls elevated while using breathing device

a) 3 balls [ ]

b) 2 balls [ ]

c) 1 balls [ ]

d) Don’t know [ ]

8. What is breathing exercise?

a) Inhalation through the nose and exhalation through the mouth [ ]

b) Only coughing [ ]

c) Take deep inhalation [ ]

d) Exhale through the mouth [ ]

9. What are the precautions to be followed during coughing exercise?

a) Perform before food [ ]

b) Support the incision area with chest pillow [ ]

c) Perform sitting position [ ]

d) All the above [ ]

10. What is arm exercise?

a) Flexion and extension of arm [ ]

b) Wrist rotation [ ]

c) Rotate the shoulders [ ]

d) All the above [ ]

11.What are the purpose of doing arm exercise after cardiac surgery?

a) It helps to improve flexibility and movement of shoulder [ ]

b) It strengthen the muscle of chest, arms and shoulders. [ ]

c) It promotes blood circulation [ ]

d) All the above [ ]

12.When arm exercise should be avoided ?

a) Feeling of chest pain [ ]

b) Before food [ ]

c) Stroke [ ]

d) Before sleep [ ]

13.What is mean by shoulder rotation exercise?

a) Wrist rotation clockwise [ ]

b) Shoulder and elbow stretch [ ]

c) Shoulder rotation clockwise and anti-clockwise [ ]

d) Elbow stretch [ ]

14.Which of the flowing exercise prevent stiffness of shoulder?

a) Elevation and depression [ ]

b) Protraction and retraction [ ]

c) Abduction and Adduction [ ]

d All the above [ ]

15. What is mean by wrist circle?

a) Flexion of the wrist [ ]

b) Extension of the wrist [ ]

c) Rotating the wrist clockwise anti clock wise [ ]

d) All the above [ ]

16. Purpose of elbow flexion exercise?

a) Arm muscle strengthening [ ]

b) prevention of muscle stiffness [ ]

c) Improve mobility [ ]

d) All the above [ ]

17.Which exercise can be done to reduce deep vein thrombosis?

a) Elbow flexion [ ]

b) Leg exercise [ ]

c) Coughing exercise [ ]

d) Shoulder stretch

18.What are the advantages of turning exercise in bed after surgery?

a) It increases GI peristalsis [ ]

b) It prevents pressure sore [ ]

c) It promotes comfort [ ]

d) All the above [ ]

19. Which of this following is contraindicated for post operative mobilization?

a) Even surface [ ]

b) Increased blood pressure [ ]

c) Hot weather [ ]

d) Cold weather [ ]

20. What is advantage of walking?

a) It improve blood circulation [ ]

b) It improves mobilization [ ]

c) It prevents in deep vein thrombosis [ ]

d) All the above [ ]

PART - II [REGARDING POST OPERATIVE COMPLICATION]

21. What are the complications, if post –operative exercise are not performed?

a) Decreased intestinal motility [ ]

b) Pneumonia [ ]

c) Shoulder stiffness [ ]

d) All the above [ ]

22. What are the potential complications of Cardiac surgery?

a) Cerebovascular accident [ ]

b) Peri arthritis [ ]

c) Hypoxia [ ]

d) All the above [ ]

23. What are all the complication occurred if you are not performing wrist rotation?

a) Wrist drop [ ]

b) Rduced peripheral circulation [ ]

c) A & B [ ]

d) Hypoxia [ ]

24. What are the complications occurs if breathing exercise are not performed?

a) Pneumonia [ ]

b) Atelectasis [ ]

c) Hypo pulmonary ventilation [ ]

d) All the above [ ]

25.What complications occurred if you are not performing leg exercise?

a) Deep vein thrombosis [ ]

b) Muscle stiffness [ ]

c) Pressure ulcer [ ]

d) All the above [ ]

26. How to prevent post operative complications?

a) Balanced diet [ ]

b) Regular post operative exercise [ ]

c) Taking prescribed medications [ ]

d) All the above [ ]

27. Which complication will be occurred if shoulders exercise are not performed?

a) Periarthritis shoulders [ ]

b) Tennis elbow [ ]

c) Wrist drop [ ]

d) None of the above [ ]

28. What are all the methods used to prevent pressure sore complication ?

a) Frequent turning [ ]

b) Proper positioning [ ]

c) oil & powder application to back and pressure areas [ ]

d) All the above [ ]

29. How to prevent complications through the use of breathing device ?

a) It helps to improves pulmonary ventilation [ ]

b) It facilitates respiratory gaseous exchange [ ]

c) Prevent from atelectasis [ ]

d) All the above [ ]

30 What are all the complication occurred if you are not performing coughing exercise?

a) Bronchial construction [ ]

b) Hypoxia [ ]

c) Airway obstruction [ ]

d) All the above [ ]

சமுதாய – குடும்ப நல காரணிகள்

பகுதி – 1

1. வயது
   அ) 45 வயதுக்குக் கீழ ( )
   ஆ) 46 – 55 வயது ( )
   இ) 56 – 65 வயது ( )
   ஈ) 65 வயதிற்கு மேல் ( )

2. பாலினம்
   அ) ஆண் ( )
   ஆ) பெண் ( )

3. மதம்
   அ) இந்து ( )
   ஆ) கிறிஸ்துவர் ( )
   இ) இஸ்லாம் ( )

4. திருமண நிலை
   அ) திருமணமானவர் ( )
   ஆ) திருமணம் ஆகாதவர் ( )
   இ) விவாகரத்து பெற்றவர் ( )
   ஈ) விதவை ( )

5. கல்வித் தகுதி
   அ) கல்வி அறிவு அற்றவர் ( )
   ஆ) ஆரம்பப் பள்ளி ( )
   இ) மேல்நிலை ( )
   ஈ) பட்டதாரி ( )

6. தொழில்
   அ) அரசு ஊழியர் ( )
   ஆ) தனியார் ஊழியர் ( )
   இ) சுயதொழில் ( )
   ஈ) மற்றவர் ( )

7. குடும்ப வருமானம்
   அ) ரூ. 3000/-க்கு கீழ் ( )
   ஆ) ரூ. 3001/- ரூ.6000/- ( )
   இ) ரூ. 6001/- ரூ.9000/- ( )
   ஈ) ரூ. 9001/- க்கு மேல் ( )

8. வசிக்கும் இடம்
   அ) கிராமம் ( )
   ஆ) நகரம் ( )

9. உணவுப் பழக்கம்
   அ) சைவம் ( )
   ஆ) அசைவம் ( )

10. தனிப்பட்ட பழக்கங்கள்

அ) புகைப்பிடித்தல் மற்றும் மது அருந்துதல் ( )
ஆ) மதுஅருந்துதல் மட்டும ( )
இ) புகைபிடித்தல் மட்டும ( )
ஈ) புகையிலை போடுதல ( )
உ) வெற்றிலை பாக்கு போடுதல ( )
ஊ) எதுவும் இல்லை ( )

பகுதி 2

பிரிவு 1 இருதய அறுவை சிகிச்சைக்குப் பின் மேற்கொள்ள வேண்டிய உடற்பயிற்சி விவரங்கள்

1. அறுவை சிகிச்சைக்குப் பின் உள்ள உடற்பயிற்சி என்றால் என்ன?

அ) அறுவை சிகிச்சைக்குப் பின் உடனடியாகசெய்ய வேண்டிய பயிற்சி ( )
ஆ) ஒரு வாரத்திற்குப் பின் செய்ய வேண்டிய உடற்பயிற்சி ( )
இ) ஒரு மாதத்திற்குப் பின் செய்ய வேண்டிய உடற்பயிற்சி ( )
ஈ) அறுவை சிகிச்சைக்கு முன் செய்ய வேண்டிய உடற்பயிற்சி ( )

2. உடற்பயிற்சியின் பயன்கள் யாவை?

அ) நோயாளியை மீண்டும் பழைய நிலைக்கு கொண்டு வருதல ( )
ஆ) அறுவை சிகிச்சை செய்த இடத்தின் காயங்களை ஆற்றுதல ( )
இ) அறுவை சிகிச்சைக்குப் பின் விளைவுகளை தவிர்த்தல ( )
ஈ) மேற்கூறியவை அனைத்தும் ( )

3. அறுவை சிகிச்சைக்குப் பின் எத்தகைய உடற்பயிற்சிகளை மேற்கொள்ளவேண்டும்

அ) மூச்சுப் பயிற்சி கருவியுடன் கூடிய மூச்சுப்பயிற்சி ( )
ஆ) இருமல் பயிற்சி மற்றும் கைகளுக்கான பயிற்சி ( )
இ) முழங்கை மடக்கதல் மற்றும் மணிக்கட்டு சுழற்சி ( )
ஈ) மேற்கூறியவை அனைத்தும் ( )

4. மூச்சுப்பயிற்சி மேற்கொள்வதற்கு மிகவும் உகந்த நிலை எது,

அ) சாய்ந்த நிலையில் ( )
ஆ) உட்கார்ந்த நிலையில் ( )
இ) படுத்தநிலையில் ( )
ஈ) மேற்கூறியவை அனைத்தும் ( )

5. மூச்சுப்பயிற்சி மேற்கொள்வதற்கு மிகவும் உகந்த நேரம் எது?

அ) இரவு உறங்க செல்வதற்கு முன் ( )
ஆ) அதிகாலை நேரம் ( )
இ) மதிய உணவிற்கு முன் ( )
ஈ) மேற்கூறிய அனைத்தும் ( )

6. சுவாசக்கருவி ஊதும் பயிற்சியின் பலன்கள் யாவை,

அ) நுரையீரல் தன்மையை முன்னேற்றுதல் ( )
ஆ) வாயுக்களின் மாற்றத்தை நுரையீரலில் மேம்படுத்துதல் ( )
இ) நுரையீரல் பாதிப்பு ( )
ஈ) அ மற்றும் ஆ ( )

7. சுவாசக் கருவி ஊதும் பயிற்சியில் எத்தனை பந்துகள் மேல்நோக்கி செல்லவேண்டும்
அ) மூன்று பந்து ( )
ஆ) இரண்டு பந்து ( )
இ) ஒரு பந்து ( )
ஈ) தெரியவில்லை ( )

8. மூச்சுப் பயிற்சி என்றால் என்ன?
அ) சுவாசத்தை மூக்கின்வழியாக எடுத்து வாயின்வழியாக வெளியேற்றுதல் ( )
ஆ) இருமல் பயிற்சி மட்டும் ( )
இ) ஆழ்ந்த மூச்சுப் பயிற்சி ( )
ஈ) மூச்சை வாய்வழியாக வெளியேற்றுதல் ( )

9. இருமல் பயிற்சி செய்யும்பொழுது கடைபிடிக்கவேண்டிய வழிமுறைகள் என்ன?
அ) உணவிற்கு முன் செய்யவேண்டும் ( )
ஆ) அறுவை சிகிச்சை செய்த பகுதியை தலையணை வைத்து பாதுகாத்து கொள்ளவேண்டும் ( )
இ) அமர்ந்த நிலையில் செய்யவேண்டும் ( )
ஈ) ஆ மற்றும் இ ( )

10. கை பயிற்சி என்றால் என்ன?
அ) கையை மடக்கி நீட்டுதல் ( )
ஆ) மணிக்கட்டினை சுழற்றுதல் ( )
இ) தோள்பட்டையை சுழற்றுதல் ( )
ஈ) மேற்கூறிய அனைத்தும் ( )

11. இதய அறுவை சிகிச்சைக்குப் பின் கை பயிற்சி செய்வதன் அவசியம் என்ன?
அ) தோள்பட்டை தசைகளை வலுப்படுத்த ( )
ஆ) இதய தசைகளை வலுப்படுத்த ( )
இ) இரத்த சுழற்சியினை அதிகப்படுத்த ( )
ஈ) மேற்கூறிய அனைத்தும் ( )

12. கை பயிற்சியை எப்பொழுது தவிர்க்க வேண்டும்?
அ) நெஞ்சு வலியின்பொழுது ( )
ஆ) உணவு உட்கொள்ளும் முன்பு ( )
இ) பக்கவாதம் ( )
ஈ) உறங்க செல்வதற்கு முன் ( )

13. முழங்கை சுழற்சி என்றால் என்ன?
அ) முழங்கையை வலதுபுறமாக சுழற்றுதல் ( )
ஆ) தோள்பட்டை மற்றும் முழங்கையை நீட்டுதல் ( )
இ) முழங்கையை விரித்தல் ( )
ஈ) முழங்கையை வலது மற்றும்ட இடதுபுறமாக சுழற்றுதல் ( )

14. எவ்விதமான உடற்பயிற்சி தோள்பட்டை அழுத்தத்தை கட்டுப்படுத்துகிறது?
அ) தோள்பட்டையை மேலும் கீழும் அசைக்கும் பயிற்சி ( )
ஆ) தோள்பட்டையை உள்ளேயும் வெளியேயும் அசைக்கும் பயிற்சி ( )
இ) அ மற்றும் ஆ ( )
ஈ) மேற்கூறிய எதுவுமில்லை ( )

15. மணிக்கட்டு சுழற்சி என்றால் என்ன?

அ) மணிக்கட்டை மடக்குதல் ( )

ஆ) மணிக்கட்டை நீட்டுதல ( )

இ) மணிக்கட்டை வலப்புறமாகவும் இடப்புறமாகவும் சுழற்றுதல் ( )

ஈ) மேற்கூறிய அனைத்தும் ( )

16. முழங்கை மடக்கும் பயிற்சிக்கான காரணம் என்ன?

அ) கை தசைகளை வலுப்படுத்துதல் ( )

ஆ) முழங்கை பிடிப்பை தவிர்த்தல ( )

இ) முழங்கை இயக்கத்தை வலுப்படுத்துதல ( )

ஈ) மேற்கூறிய அனைத்தும் ( )

17. நரம்பு இரத்த உறைவை குறைக்க எவ்விதமான உடற்பயிற்சியை மேற்கொள்ள வேண்டும்?

அ) முழங்கை பயிற்சி ( )

ஆ) கால் பயிற்சி ( )

இ) இரும்பும் பயிற்சி ( )

ஈ) தோள்பட்டை பயிற்சி ( )

18. அறுவை சிகிச்சைக்குப் பின் படுக்கையில் திரும்பும் பயிற்சியின் நன்மைகள யாவை?

அ) குடல் தசை இயக்கத்தை அதிகரிக்கிறது ( )

ஆ) அழுத்தத்தினால் ஏற்படும் புண்ணை தடுக்கிறது ( )

இ) இரத்த சுழற்சியை மேம்படுத்துகிறது ( )

ஈ) இவை அணைத்தும் ( )

19. நடைபயிற்சியை எவ்விதமான சூழ்நிலையில் மேற்கொள்ளக்கூடாது?

அ) சமமான தரைநிலை ( )

ஆ) இரத்த அழுத்தம் அதிகமாக இருக்கும்பொழுது ( )

இ) வெப்பமான சூழ்நிலை ( )

ஈ) குளிரான சூழ்நிலை ( )

20. நடைபயிற்சியின் நன்மைகள் யாவை?

அ) இரத்த ஓட்டத்தை சீர்செய்கிறது ( )

ஆ) உடல் இயக்கத்தை மேம்படுத்த ( )

இ) இரத்த உறைவை தடுக்கிறது ( )

ஈ) மேற்கூறியவை அனைத்தும் ( )

பிரிவு 2 இருதய அறுவை சிகிச்சைக்குப் பின் உடற்பயிற்சிகள் மேற்கொள்ளாவிடில் ஏற்படும் பின் விளைவுகள் பற்றியவை

21. இருதய அறுவை சிகிச்சைக்குப் பின் உடற்பயிற்சிகள் மேற்கொள்ளாவிடில் ஏற்படும் பின்விளைவுகள் யாவை?
    அ) குடல்தசை இயக்கத்தை குறைக்கிறது ( )
    ஆ) நுரையீரல் பாதிப்பு ( )
    இ) தோள்பட்டை பிடிப்பு ( )
    ஈ) மேற்கூறிய அனைத்தும் ( )

22. இருதய அறுவை சிசிக்சைக்குப் பின்வரும் விளைவுகள் யாவை?
    அ) மூளை ரத்தநாளம் பாதிப்பு ( )
    ஆ) மூட்டுவலி ( )
    இ) பிராணவாயு குறைபடுதல் ( )
    ஈ) மேற்கூறிய அனைத்தும் ( )

23. மணிக்கட்டு சூழற்சி மேற்கொள்ளவில்லை எனில் வரும் பின்விளைவுகள் யாவை?
    அ) மணிக்கட்டு செயல் இழத்தல் ( )
    ஆ) இரத்த ஓட்டம் தடைபடுதல் ( )
    இ) சதைப்பிடிப்பு ஏற்படுதல ( )
    ஈ) மேற்கூறிய அனைத்தும் ( )

24. மூச்சு பயிற்சி மேற்கொள்ளவில்லை எனில் வரும் பின்விளைவுகள் யாவை?
    அ) நுரையீரலில் அதிகப்படியான காற்று தங்குதல் ( )
    ஆ) நுரையீரல் பாதிப்பு ஏற்படுதல் ( )
    இ) நுரையிரலில் வாயுமாற்றம் குறைபடுதல் ( )
    ஈ) மேற்கூறிய அனைத்தும் ( )

25. காலில் செய்யவேண்டிய உடற்பயிற்சியினை மேற்கொள்ளவில்லை எனில் ஏற்படும் பின்விளைவுகள் யாவை?
    அ) இரத்த உறைவு ஏற்படும் ( )
    ஆ) தசை பிடிப்பு ( )
    இ) அழுத்தத்தினால் வரும் புண் ( )
    ஈ) மேற்கூறிய அனைத்தும் ( )

26. அறுவை சிகிச்சைக்குப் பின் ஏற்படும் விளைவுகளை எவ்வாறு தடுக்கலாம்?
    அ) சரிவிகித உணவு ( )
    ஆ) தினந்தோறும் மேற்கொள்ளும் உடற்பயிற்சி ( )
    இ) தவறாமல் மருந்து எடுத்துக் கொள்ளுதல் ( )
    ஈ) மேற்கூறிய அனைத்தும் ( )

27. தோள்பட்டை பயிற்சி மேற்கொள்ளவில்லை எனில் வரும் பின்விளைவுகள் யாவை?
    அ) தோள்பட்டை பிடிப்பு ( )
    ஆ) முழங்கை பிடிப்பு ( )
    இ) மணிக்கட்டு செயலிழத்தல ( )
    ஈ) மேற்கூறிய எதுவும் இல்லை ( )

28. அழுத்தத்தினால் ஏற்படும் புண்களை எவ்வாறு தடுக்கலாம்?

அ) அடிக்கடி திரும்பி படுத்தல் ( )

ஆ) சரியான நிலையில் இருத்தல் ( )

இ) முதுகிற்கு பவுடர் போடுதல் ( )

ஈ) மேற்கூறிய அனைத்தும் ( )

29. சுவாச கருவி பயன்படுத்துவதன் மூலம் தவிர்க்கக்கூடிய பின்விளைவுகள் யாவை?

அ) நுரையீரலில் காற்றோட்ட பகுதியை அதிகரிக்கிறது ( )

ஆ) நுரையிரலில் வாயு மாற்றத்திற்கு உதவுகிறது ( )

இ) நுரையீரல் பாதிப்பில் இருந்து பாதுகாக்கிறது ( )

ஈ) மேற்கூறிய அனைத்தும் ( )

30. இருமல் பயிற்சியை மேற்கொள்ளவிடில் வரும் பின்விளைவுகள் யாவை?

அ) மூச்சுக்குழாய் சுருங்குதல் ( )

ஆ) பிராணவாயு குறைதல் ( )

இ) மூச்சுப்பாதை தடைபடுதல் ( )

ஈ) மேற்கூறிய அனைத்தும் ( )

SCORE KEY

PART I - KNOWLEDGE OF CARDIO THORACIC PATIENTS REGARDING POST OPERATIVE EXERCISE

Question No.	Answer	Score
1	A	1
2	D	1
3	D	1
4	A	1
5	D	1
6	D	1
7	A	1
8	A	1
9	D	1
10	D	1
11	D	1
12	A	1
13	C	1
14	D	1
15	D	1
16	D	1
17	B	1
18	D	1
19	B	1
20	D	1
	TOTAL	**20**

PART – II KNOWLEDGE OF CARDIOTHORACIC PATIENTS REGARDING POSTOPERATIVE COMPLICATIONS

Question No.	Answer	Score
21	D	1
22	D	1
23	C	1
24	D	1
25	D	1
26	D	1
27	A	1
28	D	1
29	D	1
30	D	1
	TOTAL	**10**

21 – 30 marks Adequate (68-100%)

11 – 20 marks moderately adequate (34-67%)

0 – 10 marks Inadequate (0-33%)

POST-OPERATIVE EXERCISES AFTER CARDIO

THORACIC SURGERY

DEEP BREATHING EXERCISE

PROCEDURE

- Sit in semi fowler's position.
- Support the back with pillows.
- Rest the hands tightly over the abdomen and expand the abdomen
- Take the deep breath, hold for 3-5 seconds
- Exhale the air through the mouth, relax repeat 15 times.

INCENTIVE SPIROMETRY

PROCEDURE

- Sit in semi-fowler s position
- Hold the spirometer in upright position
- Steady the spirometer with one hand and hold the mouth piece with other hand.
- Take the slow deep breath, hold for 2-6 seconds.
- Exhale after taking the tube out, encourage the patient to look for 3 balls to raise.
- Cough after the procedure.

COUGHING EXERCISE

PROCEDURE

- Sit in upright position
- Place a small pillow over the incision area.
- Take a deep breath over to a count of 3
- Perform forceful cough 4-5 times.
- Repeat 5 times every 2 hours.

ARM STRETCH EXERCISE

PROCEDURE;

- Stretch the arms at sides of your body.
- Raise the arm above the head.
- Then down to the side.
- Keep the muscles in the arms relaxed.
- Repeat at least 10 times.

 **SHOULDERS ROTATION**	**PROCEDURE;** • Sit in a chair, exhale all the air through the mouth. • Stretch the arms straight out to your side. • Bend the elbows to touch the shoulder. • Rotate the shoulder in circle motion 3 times, in clockwise and anti clockwise manner. • Keep the muscles in your arms relaxed. • Relax, repeat for ten times.
 **WRIST ROTATION**	**PROCEDURE** • Stretch both the hands straightly. • Rotate both the wrist in clockwise and anti-clockwise direction. • Repeat ten times.

 **TURNING EXERCISE**	**PROCEDURE;** • Assume supine position on right side of the bed. • Place the right hand over the incision area to splint it. • Keep the left leg straight and flex right • Flex knee over the left leg. • Place the pillow behind the back. • Turn every 3-5 times.
 **LEG EXERCISE**	**PROCEDURE;** • Sit or lie with leg supported. • Rotate each ankle in complete circle. • Alternatively flex and extend the foot. • Raise each leg straight up. • Hold the position for 3-4 seconds. • Keep the legs down, repeat ten times every 3 hours.

 **WALKING**	**PROCEDURE;** • Instruct the patient to walk on leveled surface. • Walk for 4-5 rounds every hour at a comfortable pace during early stage of recovery. • Gradually increase the walking distance. • Should not lift pound than ten pounds.
 **STAIR CLIMPING**	**PROCEDURE;** • Stair climbing should be started on 4 post-operative day • Per day 3 times stair climbing should be carried out • Stair climbing should be done after 30 minutes of meal hour.

இருதய அறுவை சிகிச்சைக்குப் பின் செய்ய வேண்டிய உடற்பயிற்சிகள்

மூச்சுப்பயிற்சி

செய்முறை

- நோயாளினை அரை நிலையில் அமர வைக்கவேண்டும்இ
- தலையணையில் சாய்ந்து கையை வயிற்றுப்பகுதியில் வைத்து மூக்கின் வழியாக சுவாசிக்கவும்
- மூன்று விநாடிகள் மூச்சைப் பிடித்து வாயின் வழியாக மூச்சை வெளியேற்றவும்
- இப்பயிற்சியை ஒரு மணி நேரத்திற்கு பத்து முறை செய்யவேண்டும்
- இப்பயிற்சியின் மூலம் நுரையீரல் சுருக்கத்தைத் தவிர்க்கலாம்

சுவாசக் கருவி ஊதும் பயிற்சி

செய்முறை

- நோயாளியை நாற்காலியில் நேராக அமர வைக்க வேண்டும்.
- ஒரு கையினால் சுவாசக் கருவியை பிடித்துக் கொண்டு மற்றொரு கையினால் சுவாசக் கருவியின் வாய்ப்பகுதியை பிடித்துக் கொள்ள வேண்டும்.
- ஆழ்ந்த மூச்சு எடுத்து இரண்டு முதல் ஆறு விநாடிகள் வரை மூச்சைப் பிடித்துக் கொண்டு மூன்று பந்துகளை மேல் நோக்கி எடுத்துச் செல்லவேண்டும்.
- மூச்சை வெளியேற்றி திரும்ப முயற்சித்து நெஞ்சுசலியை வெளியேற்றவும்
- ஒரு மணிக்கு நான்கு அல்லது ஐந்து முறை இப்பயிற்சியை செய்யவேண்டும்

இருமல் பயிற்சி

செய்முறை

- நோயாளியை நேராக அமர வைத்து சிறிய தலையணையை அறுவை சிகிச்சை செய்த பகுதியில்
- வைக்கவும்.
- ஆழ்ந்த மூச்சு எடுக்கவும்.
- 4-5 முறை தொடர்ந்து இருமவும்.
- இரண்டு மணிக்கு ஒருமுறை இப்பயிற்சியை 5 முறை செய்ய வேண்டும்.
- இப்பயிற்சியின் மூலம் காய்ச்சல் மற்றும் நிமோனியாவை தவிர்க்கலாம்.

கை நீட்டும் பயிற்சி

செய்முறை

- இரண்டு கைகளையும் வெளிப்புறமாக வைத்துக் கொள்ளவும்
- தலைக்கு மேல் இரு கைகளையும் உயர்த்தி பின்பு கீழே கொண்டு வர வேண்டும்
- கையின் தசைகளை தளர்வாக வைத்து பத்து முறை இப்பயிற்சியை செய்யவேண்டும்
- இப்பயிற்சியின் பலனாக மார்பு மற்றும் கையின் தசைகள் விரிவாக விரிவடைந்து இரத்த ஓட்டம் அதிகரிக்கும்

தோல்பட்டை சுழற்சி

செய்முறை

- நாற்காலியில் அமர்ந்து கொண்டு மூச்சை வெளியேற்றி இரண்டு கைகளையும் நேராக தூக்கி செல்லவேண்டும்.
- இரண்டு கைகளை மடக்கி விரல்களால் தோள்பட்டையை தொடவும்
- இரண்டு கைகளை மடக்கி விரல்களால் தோள்பட்டையை தொடவும்
- 3முறை இடது மற்றம் வலதுபுறம் சுழற்றவும்.
- தோள்பட்டையின் தசைகளை தளர்வாக வைத்து பத்து முறை இப்பயிற்சியை செய்ய வேண்டும்
- இப்பயிற்சியின் மூலம் தசை பிடிப்பு மற்றும் மார்பு சுளுக்கு தவிர்க்கப்படுகிறது.

மணிக்கட்டு சுழற்சி

செய்முறை

- கையை நேராக வைத்துக் கொண்டு இரண்டு மணிக்கட்டையும் சுழற்றவும.
- இப்பயிற்சியை பத்து முறை செய்ய வேண்டும்.
- இப்பயிற்சியினால் இரத்தநாளங்களில் இரத்த ஓட்டம் சீராக அமைத்து இதயத்தை கட்டுப்பாட்டுக்குள் வைக்கிறது.

திரும்பும் பயிற்சி

செய்முறை

- மெத்தையில் வலதுபுறமாக நேராக படுத்து அறுவை சிகிச்சை செய்த இடத்தை பிடித்துக் கொள்ள வேண்டும்.
- இடது காலை நேராக வைத்து வலது காலை மடக்க வேண்டும்.
- இடதுகால் மேல் வலதுகாலை வைத்து முட்டியை மடக்கி இடதுபுறமாக திரும்ப வேண்டும்.
- இப்பயிற்சியை மூன்று மணி நேர இடைவெளியில் ஐந்து முறை செய்ய வேண்டும்
- இப்பயிற்சியின் மூலம் உடற்புண் தடுத்து. சிறு மற்றும் பெருங்குடல் அசைவுகள் அதிகரிக்கப்படுகிறது.

கால் பயிற்சி

செய்முறை

- அமர்ந்து அல்லது படுத்து காலை பிடித்துக் கொண்டு கணுக்காலை முழுவதுமாக சுற்ற வேண்டும்
- ஒவ்வொரு காலாக இரு கால்களை மடக்கி நீட்ட வேண்டும்.
- காலை நேராக வைத்து 3 (அ) 4 விநாடிகள் புடித்து காலை கீழே கொண்டு வர வேண்டும்
- இப்பயிற்சியை இரண்டு மணி நேரத்திற்கு ஐந்து முறை செய்ய வேண்டும்.

 **நடை பயிற்சி**	**செய்முறை** • நடைபயிற்சிக்கு சமநிலை தரையைத் தேர்ந்தெடுத்து நடக்க வேண்டும். • அறுவை சிகிச்சைக்குப் பின்புற ஆரம்ப தசையில் 3 நிமிடங்களுக்கு நடைபயிற்சி மேற்கொள்ளவேண்டும். • இப்பயிற்சி உடல் எடையை கட்டுக் கோப்புக்குள் வைக்க உதவும்.
 **மாடிப்படி ஏறுதல் பயிற்சி**	**செய்முறை** • அறுவை சிகிச்சை செய்த நான்காவது நாளிலிருந்து இப்பயிற்சியை செய்ய வேண்டும். • நாள் ஒன்றுக்கு 3 முறை இப்பயிற்சியை செய்ய வேண்டும்